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Sixth Annual Report

—OF THE—

Illinois State Bee-Keepers' Association *

Organized Feb. 26, 1891

SPRINGFIELD, ILLINOIS

Compiled by
JAMES A. STONE, Secretary
R.R. 4, Springfield, Ill.

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JAN 24 1919

SIXTH ANNUAL REPORT

—OF THE—

Illinois State Bee-Keepers' Association

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Organized Feb. 26, 1891,

—AT—

SPRINGFIELD, ILL.

—◆◆◆—

COMPILED BY
JAMES A. STONE, SECRETARY,
R.R. 4, Springfield, Ill.

—◆◆◆—

CHICAGO, ILL.:
AMERICAN BEE JOURNAL PRINT,
1907.



Illinois State Capitol Building at Springfield.

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LETTER OF TRANSMITTAL.

OFFICE OF THE SECRETARY,
R.R. 4, SPRINGFIELD, ILL., Jan. 25, 1907. }

*To his Excellency, Charles S. Deneen, Governor of the State
of Illinois:*

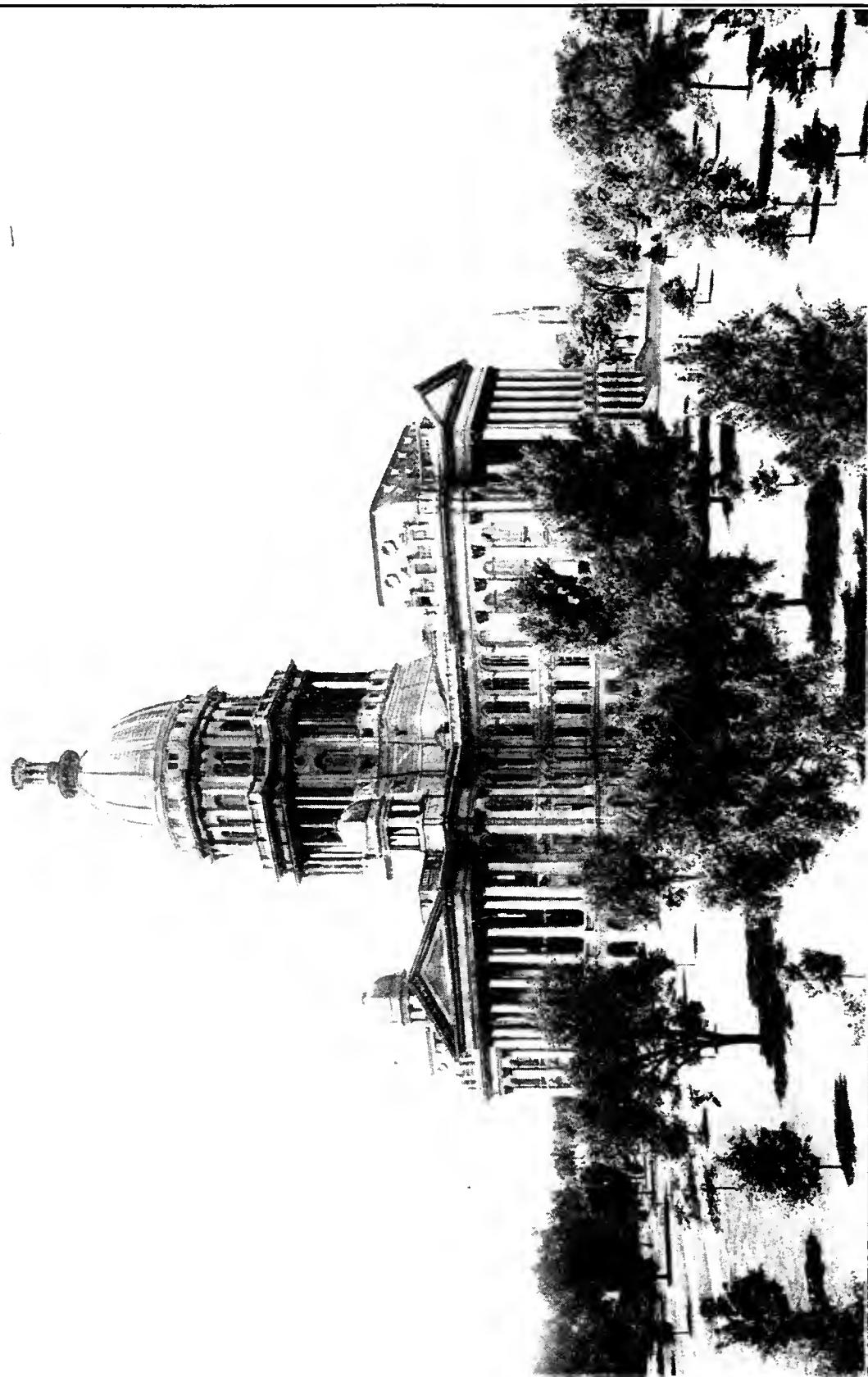
SIR: I have the honor to transmit herewith the Sixth
Annual Report of the Illinois State Bee-Keepers' Associa-
tion.

Respectfully submitted,

JAMES A. STONE, *Secretary.*

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Illinois State Capitol Building at Springfield.

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Gov. of Illinois

LETTER OF TRANSMITTAL.

OFFICE OF THE SECRETARY,
R.R. 4, SPRINGFIELD, ILL., Jan. 25, 1907.

*To his Excellency, Charles S. Deneen, Governor of the State
of Illinois:*

SIR: I have the honor to transmit herewith the Sixth
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Respectfully submitted,

JAMES A. STONE, *Secretary.*

v.6 serial

Copy of the Report of the
Illinois State Bee-Keepers' Association

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SIXTH ANNUAL REPORT OF THE

OFFICERS AND MEMBERS

—OF THE—

Illinois State Bee-Keepers' Association

FOR 1907



OFFICERS:

President and State Foul Brood Inspector,
J. Q. SMITH, Lincoln

Vice-Presidents—

1st—J. B. JOHNSON, Williamsfield
2d —S. N. BLACK, Clayton
3d —E. J. BAXTER, Nauvoo.
4th—A. L. KILDOW, Putnam.
5th—W. H. HYDE, New Canton

Secretary— JAS. A. STONE, Rt. 4, Springfield

Treasurer— CHAS. BECKER, Pleasant Plains

LIST OF MEMBERS

—OF THE—

Illinois State Bee-Keepers' Association
FOR 1907

(Where no State is given "Illinois" is understood.)



Almond Bros.—Libertyville
 Anderson, J. L.—Harvard
 Andrews, T. P.—Farina
 Arnd, H. M.—191 E. Superior St., Chicago
 Augenstein, A. A—Rt. 1, Dakota
 Bagley, Miss Pet—Putnam
 Baldwin, E. W.—DeKalb
 Baumgaertner, J. G.—New Memphis
 Barrow, Robert—Centralia
 Baxter, E. J.—Nauvoo
 Becker, Chas.—Pleasant Plains
 Bender, Chas.—Newman
 Benjamin, W. W.—Box 76, Metropolis
 Bercaw, Geo. W.—Eltoro, Calif.
 Bevier, M.—Bradford
 Black, S. H.—Good Hope
 Black, S. N.—Clayton
 Bodenschatz, Adam—Lemont
 Bolt, R.—Rt. 3, Fulton
 Burnett, R. A.—199 S. Water St., Chicago
 Cameron, L. A.—Rt. 2, Hoopeston
 Carson, S. K.—Chatsworth
 Cave, Geo. W.—Kirkwood
 Cherry, Thos. M.—Quincy
 Clawson, W. A.—Rt. 2, Assumption
 Coffman, D. H.—Hamilton
 Coppin, Aaron—Wenona
 Cremers, L. H.—East Dubuque
 Crim, S. T.—Dawson
 Crotzer, A. S.—Lena
 Cryder, Ed T.—Morris
 Cunningham, J. C.—Box 119, Streator
 Dadant, C. P.—Hamilton
 Dailey, Wm.—Rt. 3, Woodstock
 Dick, D. M.—Piper City
 Diebold, J. A.—Seneca
 Dvorak, John Jr.—Algonquin
 Duby, H. S.—St. Anne
 Durflinger, Orville S.—Box 21, Henry
 Earnest, D. P.—Comstock

Elliott, Wm.—2533 Lowell Ave., Chicago
 Emmons, A. I.—Greenfield
 Eve, Geo.—Minonk
 Evett, Sam—Carterville
 Fitch, J. Blaine—Cobden
 Flanagan, E. T.—Belleville
 Fleisher, H. A.—Ohio
 France, N. E. (Honorary)—Platteville, Wis.
 Frank, J. C.—Rt. 1, Davis
 Frank, Jno. C.—Rt. 2, Box 55, Lyons, Kan.
 Gamash, Jas.—Waukegan
 Glasser, Wm.—Box 43, Dakota
 Grant, W. W.—Marion
 Gray, W. H.—Chillicothe
 Gundy, W. C.—Richey
 Haines, C. A.—2607 St. Clair Ave., E. St. Louis
 Hall, B. D.—Royal
 Hallman, W. M.—Chatsworth
 Halloran, Thos. F.—Reddick
 Harmon, Geo.—Chatsworth
 Hazlett, F. B.—214 Arthur Ave., Galesburg
 Hettel, Mathias—Marine
 Hinderer, Frank—Frederick
 Holdener, J. D.—Carlyle
 Homan, W. A.—703 N. 12th St., Quincy
 Hoyle, Jno. J.—Chatsworth
 Hyde, W. H.—New Canton
 Johnson, J. E.—Williamsfield
 Kennedy, Miss L. C.—Rt. 11, Curran
 Kildow, A. L.—Putnam
 Lawrence, W. G.—Fulton
 Lavalla, Maurice—Fulton
 Laxton, J. G.—Lyndon
 Lee, Horace W.—Pecatonica
 Lind, M. H.—Baders
 Lindsay, Mrs. B. F.—71 Bowen Ave. Chicago

Longwell, B. R.—Rochelle	Simpson, Wm.—Meyer
Means, Thos. K.—Mulkeytown	Slack, Geo. B.—Mapleton
Miller, A. J.—Decatur	Smith, J. Q.—Lincoln
Miller, Dr. G. C. (Honorary)—Marengo	Stone, Jas. A.—Rt. 4, Springfield
Miller, M. M.—Chatsworth	Stowers, S. N.—Piper City
Miller, W. C.—Box R., Ottawa	Switzer, Sam'l—St. Charles
Moore, W. B.—Altona	Thornton, Jno. A.—Lima
Motsinger, W. T.—South America	Tiedt, E. F.—Tiedtville
Mottaz, A.—Utica	Todd, F. Dundas—Glencoe
Muchleip, H.—Apple River	Tyler, Fred—San Jose
McDael, C. J.—Petersburg	Ulrich, G. E.—Campus
McLeod, D. C.—704 E. 2d St., Pana	Vogel, Henry—Galena
Ness, L. L.—Morris	Wagner, F. M.—Quincy
Newcomer, Sam M.—Rt. 2, Polo	Walker, Albert—Petersburg
Norberg, Peter J.—Spring Valley	Walrick, Wm.—Piper City
Nordling, J. C.—Cobden	Werner, Louis—Edwardsville
Nydegger, John—Danville	Whitmore, Dr. N. P.—Gardner, Grundy Co.
Oakes, Lannes P.—Metropolis	Wiegand, Adam—282 Clybourne Ave., Chicago
Ostermeier, Jno.—Cornland	Winter, I. V.—R. F. D., N. Aurora
Otter, J. D.—Donnellson	Yoos, Geo. F.—Central City
Payne, Jno. W.—Rt. 1, Georgetown	York, George W. (Editor American Bee Journal), Chicago
Picaman, Gus—Litchfield	Young, A. O. K.—Box 264, Girard
Poindexter, Jas.—Bloomington	Young, Robt.—Rt. 2, No. 19, Mt. Auburn
Pyles, I. E.—Putnam	Zachgo, Hugo—Danforth
Rahn, J. J.—311 Locust St., Elgin	Zeller, Mrs. Caroline—Spring Bay
Reynolds, Alvah A.—R. F. D., Altona	Zoll, C.—Box 62, Vermont
Riley, W.—Breeds	—
Robbins, Dan'l E.—Payson	The members coming through the Northern Illinois and Southern Wisconsin Bee- Keepers' Association are:
Rose, Wm.—Lewistown	Kennedy, B.—Cherry Valley
Russow, Gottlieb—1584 N. Leavitt St., Chicago	Kluck, N. A.—McConnell
Sauer, G. L.—Polo	Lee, H. W.—Pecatonica
Sauer, Jno.—Rt. 5, Springfield	Martin, M. M.—Caledonia
Schmertman, Lewis—Freeport	McBarnes, W. H.—Rockford
Schnuckle, Willis—Centralia	McCartney, Geo.—Rockford
Scroggins, A. C.—Mt. Pulaski	
Searl, J. E.—Vermont	
Secor, W. G.—Greenfield	
Seibold, Jacob—Homer	
Settle, W. H.—Gridley	
Shearer, Hallock—Mt. Carmel	





Bee-Hive Modeled after the National Capitol Building, in the Apiary of Wm. H. Horstmann, of Cook County, Illinois.

State of Illinois—Department of State

ISAAC N. PEARSON, *Secretary of State.*

To all to whom these Presents shall come, Greeting:

WHEREAS, A certificate duly signed and acknowledged having been filed in the office of the Secretary of State on the 27th day of February, A. D. 1891, for the organization of the Illinois State Bee-Keepers' Association, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereunto attached.

Now, THEREFORE, I, Isaac N. Pearson, Secretary of State, of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said, The Illinois State Bee-Keepers' Association is a legally organized corporation under the laws of the State.

In Testimony Whereof, I hereunto set my hand, and cause to be affixed the great seal of State.

Done at the City of Springfield, this 27th day of February in the [SEAL] year of our Lord one thousand eight hundred and ninety-one, and the Independence of the United States the one hundred and fifteenth.

I. N. PEARSON,
Secretary of State.

STATE OF ILLINOIS,
SANGAMON COUNTY.

ss.

To Isaac N. Pearson, Secretary of State:

We, the undersigned, Perry J. England, Jas. A. Stone and Albert N. Draper, citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled, "An Act Concerning Corporations," approved April

18, 1872, and all acts amendatory thereof; and for the purposes of such organizations, we hereby state as follows, to-wit:

1. The name of such corporation is, The Illinois State Bee-Keepers' Association.

2. The object for which it is formed is, to promote the general interests of the pursuit of bee-culture.

3. The management of the aforesaid Association shall be vested in a board of three Directors who are to be elected annually.

4. The following persons are hereby selected as the Directors, to control and manage said corporation for the first year of its corporate existence, viz: Perry J. England, Jas. A. Stone and Albert N. Draper.

5. The location is in Springfield, in the County of Sangamon, State of Illinois. [Signed,]

PERRY J. ENGLAND,
JAS. A. STONE,
ALBERT N. DRAPER.

STATE OF ILLINOIS,
COUNTY OF SANGAMON.
ss.

I, S. Mendenhall, a notary public in and for the county and State aforesaid do hereby certify that on this 26th day of February, A. D. 1891, personally appeared before me, Perry J. England, James A. Stone and Albert N. Draper, to me personally known to be the same persons who executed the foregoing certificate, and severally acknowledged that they had executed the same for the purposes therein set forth.

In Witness Whereof, I have hereunto set my hand and seal the day and year above written.

S. MENDENHALL,
[SEAL] *Notary Public.*

CONSTITUTION AND BY-LAWS

—OF THE—

Illinois State Bee-Keepers' Association



CONSTITUTION

Adopted Feb. 26, 1901.

ARTICLE I—*Name.*

This organization shall be known as the Illinois State Bee-Keepers' Association, and its principal place of business shall be at Springfield, Ill.

ARTICLE II—*Object.*

Its object shall be to promote the general interests of the pursuit of Bee-Culture.

ARTICLE III—*Membership.*

SECTION 1. Any person interested in Apiculture may become a member upon the payment to the Secretary of an annual fee of one dollar (\$1.00). (Amendment adopted at annual meeting, November, 1905): And any affiliating Association, as a body, may become members on the payment of an aggregate fee of twenty-five cents (25c) per member.

SEC. 2. Any persons may become hon-

orary members by receiving a majority vote at any regular meeting.

ARTICLE IV.—*Officers.*

SECTION 1. The officers of this Association shall be President, Vice-President, Secretary and Treasurer. Their terms of office shall be for one year, or until their successors are elected and qualified.

SEC. 2. The President, Secretary and Treasurer shall constitute the Executive Committee.

SEC. 3. Vacancies in office—by death, resignation or otherwise—shall be filled by the Executive Committee until the next annual meeting.

ARTICLE V—*Amendments.*

This Constitution shall be amended at any annual meeting by a two-thirds vote of all the members present—thirty days' notice having been given to each member of the Association.

BY-LAWS

ARTICLE I.

The officers of this Association shall be elected by ballot and by a majority vote.

ARTICLE II.

It shall be the duty of the President to call and preserve order at all meetings of this Association; to call for all reports of officers and committees; to

put to vote all motions regularly seconded, to count the votes at all elections and declare the results; to decide upon all questions of order; and to deliver an address at each annual meeting.

ARTICLE III.

The Vice-Presidents shall be numbered respectively, First, Second, Third, Fourth and Fifth, and it shall be the

duty of one of them in his respective order to preside in the absence of the President.

ARTICLE IV.

SECTION 1. It shall be the duty of the Secretary to report all proceedings of the Association, and to record the same, when approved, in the Secretary's book; to conduct all correspondence of the Association, and to file and preserve all papers belonging to the same; to receive the annual dues and pay them over to the Treasurer, taking his receipt for the same; to take and record the name and address of every member of the Association; to cause the Constitution and By-Laws to be printed in appropriate form, and in such quantities as may be directed by the Executive Committee from time to time, and see that each member is provided with a copy thereof; to make out and publish annually, as far as practicable, statistical table showing the number of colonies owned in the spring and fall, and the amount of honey and wax produced by each member, together with such other information as may be deemed important, or be directed by the Executive Committee; and to give notice of all meetings of the Association in the leading papers of the State and in the bee journals at least four weeks prior to the time of such meeting.

SEC. 2. The Secretary shall be allowed a reasonable compensation for his services, and to appoint an assistant Secretary if deemed necessary.

ARTICLE V.

It shall be the duty of the Treasurer to take charge of all funds of the As-

sociation, and to pay them out upon the order of the Executive Committee, taking a receipt for the same; and to render a report of all receipts and expenditures at each annual meeting.

ARTICLE VI.

It shall be the duty of the Executive Committee to select subjects for discussion and appoint members to deliver addresses or read essays, and to transact all interim business.

ARTICLE VII.

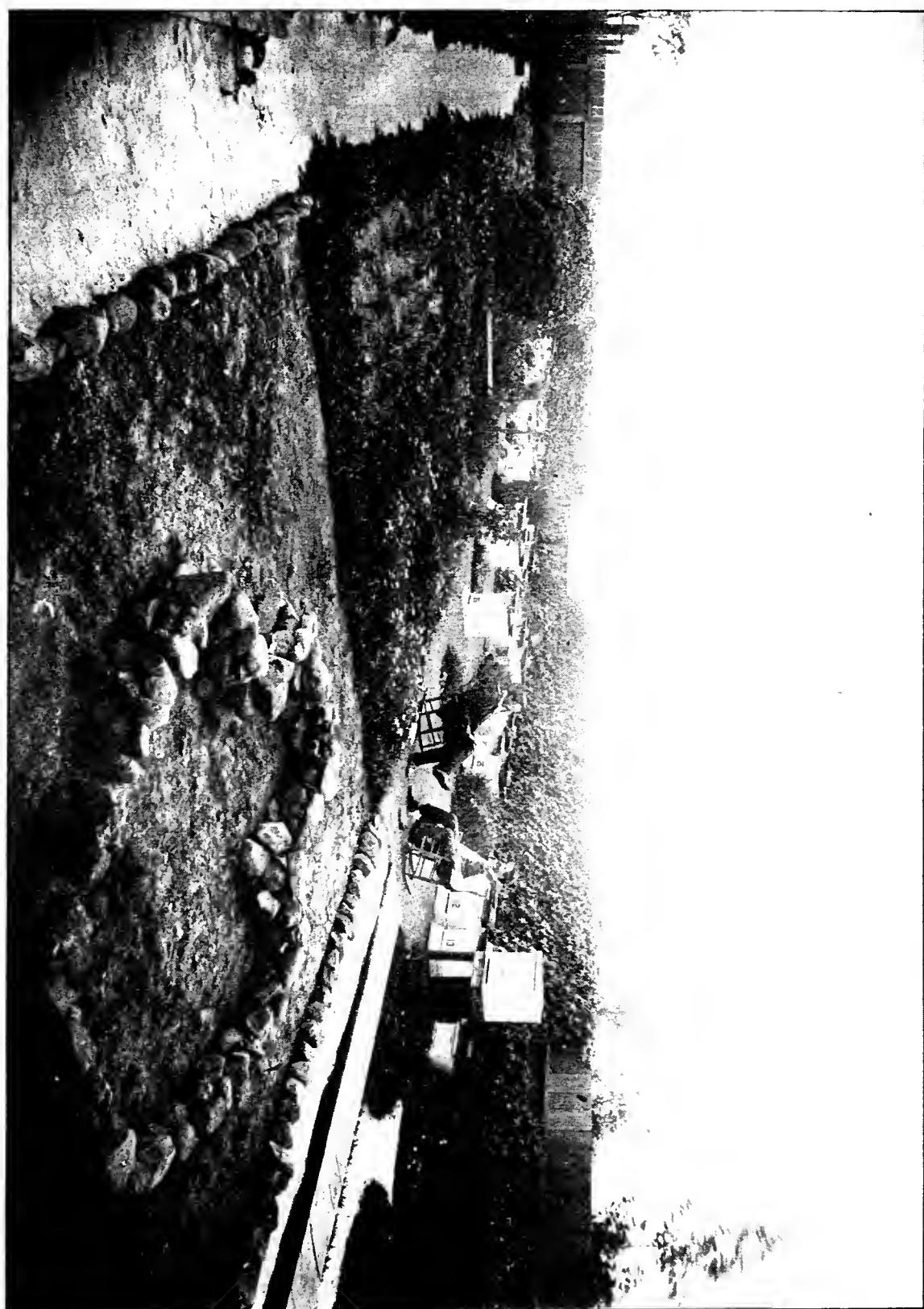
The meetings of the Association shall be, as far as practicable, governed by the following order of business:

Call to order.
Reading minutes of last meeting.
President's address.
Secretary's report.
Treasurer's report.
Reports of committees.
Unfinished business.
Reception of members and collection.
Miscellaneous business.
Election and installation of officers.
Discussion.
Adjournment.

ARTICLE VIII.

These By-Laws may be amended by a two-thirds vote of all the members present at any annual meeting.

C. E. YOCOM,
AARON COPPIN,
GEO. F. ROBBINS.



City Apiary of Peter Duff, of Cook County, Illinois.

Formation of the Illinois State Bee-Keepers' Association

SPRINGFIELD, ILL., Feb. 26, 1891.

The Capitol Bee-Keepers' Association was called to order by President P. J. England.

Previous notice having been given that an effort would be made to form a State Association, and there being present bee-keepers from different parts of the State, by motion, a recess was taken in order to form such an Association.

P. J. England was chosen temporary chairman, and C. E. Yocom temporary secretary. On motion, the Chair appointed Thos. G. Newman, C. P. Dadant and Hon. J. M. Hambaugh a committee on constitution.

Col. Chas. F. Mills addressed the meeting on the needs of a State Association, and stated that it was his opinion that the bee-keepers should have a liberal appropriation for a State Apiarian Exhibit at the World's Columbian Exposition.

A motion to adjourn till 1:30 P. M. prevailed.

AFTERNOON SESSION.

The Committee on Constitution reported a form for same, which, on motion, was read by the Secretary, by sections serially.

Geo. F. Robbins moved to substitute the word *shall* for *may* in the last clause of Section 1, Article III. This led to a very animated discussion, and the motion was lost.

J. A. Stone moved to amend the above-named section by striking out the word *ladies* and all that followed of the same section, which motion led to further discussion and motion finally prevailed.

Section 2, Article III., relating to a quorum, was, on motion, entirely stricken out.

Mr. Robbins moved to amend Article V. by adding the words, "Thirty days' notice having been given to each member." Prevailed.

Thos. G. Newman moved to adopt the Constitution, so amended, as a whole. Which motion prevailed.

See Constitution, page 8.

J. A. Stone moved that the Chair appoint a nominating committee of three on permanent organization. Prevailed.

Chair appointed as such committee, Col. Chas. F. Mills, Hon. J. M. Hambaugh, and C. P. Dadant.

Committee retired and in a few minutes returned, submitting the following named persons as candidates for their respective offices:

For President—P. J. England, Fancy Prairie.

For Vice-Presidents—Mrs. L. Harrison, Peoria; C. P. Dadant, Hamilton; W. T. F. Petty, Pittsfield; Hon. J. M. Hambaugh, Spring; Dr. C. C. Miller, Marengo.

Secretary—Jas. A. Stone, Bradfordton.

Treasurer—A. N. Draper, Upper Alton.

Mr. Black moved the adoption of the report of the committee on nominations. The motion prevailed, and the officers as named by the committee, were declared elected for the ensuing year.

Hon. J. M. Hambaugh moved that Mr. Thos. G. Newman, Editor American Bee Journal, of Chicago, be made the first honorary member of the Association. Prevailed.

At this point Col. Chas. F. Mills, said, "Mr. Chairman, I want to be the first one to pay my dollar for membership," at the same time suiting his action to his words, and others followed his example, as follows:

CHARTER MEMBERS.

Col. Chas. F. Mills, Springfield.
 Hon. J. M. Hambaugh, Spring.
 Hon. J. S. Lyman, Farmingdale.
 C. P. Dadant, Hamilton.
 Chas. Dadant, Hamilton.
 A. N. Draper, Upper Alton.
 S. N. Black, Clayton.
 Aaron Coppin, Wenona.
 Geo. F. Robbins, Mechanicsburg.
 J. W. Yocom, Williamsville.
 Thos. S. Wallace, Clayton.
 A. J. England, Fancy Prairie.
 P. J. England, Fancy Prairie.
 C. E. Yocom, Sherman.
 Jas. A. Stone, Bradfordton.

FIRST HONORARY MEMBER.

Thos. G. Newman, Editor American Bee Journal, Chicago.

(Bills offered in the 45th General Assembly, and still pending when this Report goes to press—April 1st.)



Bee-Keepers' Association

§ 1. For expenses of annual meetings, per annum, \$1,000; officers to receive no salary.

§ 2. How drawn.
§ 3 Duty of Treasurer of Association.
(Granted in the 45th General Assembly.)

A BILL

For an act making an appropriation for the Illinois State Bee-Keepers' Association.

WHEREAS, The members of the Illinois State Bee-Keepers' Association have for years given much time and labor without compensation in the endeavor to promote the interests of the bee-keepers of the State; and,

WHEREAS, The importance of the industry to the farmers and fruit-growers of the State warrants the expenditure of a reasonable sum for the holding of annual meetings, the publication of reports and papers containing practical information concerning bee-keeping, therefore to sustain the same and enable this organization to defray the expenses of annual meetings, publishing reports, suppressing foul brood among bees in the State, and promote the industry in Illinois:

SECTION 1. *Be it enacted by the People of the State of Illinois represented in the General Assembly:* That there be and is hereby appropriated for the use of the Illinois State Bee-Keepers' Association the sum of one thousand dollars (\$1,000) per annum, for the years 1907 and 1908. For the purpose of advancing the growth and developing the interests of the bee-keepers of Illinois; said sum to be expended under the direction of the Illinois State Bee-

Keepers' Association for the purpose of paying the expenses of holding annual meetings, publishing the proceedings of said meetings, suppressing foul brood among bees in Illinois, etc.

Provided, however, That no officer or officers of the Illinois State Bee-Keepers' Association shall be entitled to receive any money compensation whatever, for any services rendered for the same out of this fund.

SEC. 2. That on the order of the president, countersigned by the secretary of the Illinois State Bee-Keepers' Association, and approved by the Governor, the Auditor of Public Accounts shall draw his warrant on the Treasurer of the State of Illinois in favor of the treasurer of the Illinois State Bee-Keepers' Association for the sum herein appropriated.

SEC. 3. It shall be the duty of the treasurer of the Illinois State Bee-Keepers' Association to pay out of said appropriation on itemized and receipted vouchers such sums as may be authorized by vote of said organization on the order of the president, countersigned by the secretary and make annual report to the Governor of all such expenditures, as by provided by law.

SIXTH ANNUAL REPORT OF THE



A Government Apiary at Washington, D. C.

A BILL

For an act providing for the appointment of a State Inspector of Apiaries, and prescribing his powers and duties.

WHEREAS, The disease known as foul brood exists to a very considerable extent in various portions of this State, which if left to itself will soon exterminate the honey bees; and,

WHEREAS, The work done by an individual bee-keeper or by a State Inspector is useless so long as the official is not given authority to inspect and if need be destroy the disease when found, and,

WHEREAS, There is a great loss to the bee-keepers and fruit-growers of the State each year by the devastating ravages of foul brood:

SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That the Governor, by and with the advice and consent of the Senate, shall appoint a State Inspector of Apiaries, who shall hold his office for the term of two years and until his successor is appointed and qualified.

SEC. 2. Said Inspector shall, when notified of the existence of the disease known as foul brood among apiaries, examine all such as are so reported and all others in the same locality and ascertain whether or not such disease exists, and if satisfied of its existence, shall give the owner or the person who has the care of such apiaries full instructions

as to the manner of treating them. In case the owner of a diseased apiary shall refuse to treat his bees or allow them to be treated as directed by the said Inspector, then the said Inspector may burn all the colonies and all the combs necessary to prevent the spread of the disease, provided, said Inspector shall, before burning, give one day's notice to the owner or other person who has the care of the colonies of bees and comb, that in his judgment should be burned.

SEC. 3. The Inspector shall, on or before the second Monday of December in each calendar year, make a report to the Governor and also to the Illinois State Bee-Keepers' Association stating the number of apiaries visited, the number of those diseased and treated, the number of colonies of bees destroyed, and of the expense incurred in the performance of his duty.

SEC. 4. Any owner of a diseased apiary or appliances taken therefrom, who shall sell, barter, or give away any such apiary, appliance, or bees from such apiary, expose other bees to the danger of contracting such disease, or refuse to allow the Inspector of Apiaries to inspect such apiary, or appliances, shall be fined not less than fifty dollars nor more than one hundred dollars.

A BILL

For an Act to prevent the Spraying of Fruit Bloom.

WHEREAS, The mutual interests of the Fruit-Growers and the Bee-Keepers of the State make it imperative that fruit-bloom be first fertilized and then protected by spraying, from the injury of insects that prey upon and destroy the fruit; and,

WHEREAS, The fruit-bloom is largely fertilized by the bees, which should not be poisoned by misunderstood and misapplied use of tree spraying; and,

WHEREAS, Fruit-trees should be sprayed when the fruit is forming, and not until after the bloom has been fertilized by the bees and otherwise; and,

WHEREAS, There is much danger to the health of the consumer of honey made from nectar of blossoms poisoned

by the spraying compounds:

SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That it shall be unlawful for any one to spray fruit-bloom with any poisoning compound that may endanger the life of the honey-bees that feed upon the nectar of such bloom, or the health of those who eat the honey produced therefrom.

SECTION 2. Any person violating the provision of this Act shall be deemed guilty of a misdemeanor, and shall be fined not less than Ten, nor more than Fifty Dollars, for each offence, and it is hereby made the duty of the State's Attorney of the several counties of this State to enforce this Act, and prosecute all cases brought under this Act.



Apiary of W. P. Turner, of Peoria County, Illinois.

Foul Brood and Other Diseases of Bees.

(Republished by permission of N. E. France, Foul Brood Inspector of Wisconsin.)

Foul brood—bacillus alvei—is a fatal and contagious disease among bees, dreaded most of all by bee-keepers. The germs of disease are either given to the young larval bee in its food when it hatches from the egg of the queen-bee,

expansion of the bee industry is the prevalence of foul brood, which is so rapidly spreading over the country as to make bee-keeping a hazardous occupation."

Canada's foul brood inspector, in 1890



Showing Bad Results of Foul Brood in a Wisconsin Apiary.

or it may be contagion from a diseased colony, or if the queen deposits eggs, or the worker-bees store honey or pollen in such combs. If in any one of the above cases, the disease will soon appear, and the germs increase with great rapidity, going from one little cell to another, colony to colony of bees, and then to all the neighboring apiaries, thus soon leaving whole apiaries with only diseased combs to inoculate others. The Island of Syria in three years lost all of its great apiaries from foul brood. Dzierzon, in 1868, lost his entire apiary of 500 colonies. Cowan, the editor of the British Bee Journal, recently wrote: "The only visible hindrance to the rapid

to 1892, reported 2,395 cases, and in a later report for 1893 to 1898, that 40 percent of the colonies inspected were diseased. Cuba is one of the greatest honey-producing countries, and was lately reported to me by a Wisconsin bee-keeper who has been there, and will soon return to Wisconsin: "So plentiful is foul brood in Cuba that I have known of large apiaries to dwindle out of existence from its ravages, and hundreds more are on the same road to sure and certain death. I myself took in 90 days in Cuba, 24,000 pounds of fine honey from 100 colonies, but where is that apiary and my other 150-colony apiary? Dead from foul brood." Cuba,

in 1901, exported 4,795,600 pounds of honey, and 1,022,897 pounds of beeswax.

Cuba at present has laws to suppress foul brood, and her inspector is doing all possible to stamp the same from the island.

Even in Wisconsin I know of several quite large piles of empty hives, where also many other apiaries where said disease had gotten a strong foothold. By the kindness of the Wisconsin bee-keepers, and in most cases, by their willing assistance, I have, during the last five years, gotten several counties free of the disease, and at the present writing, March 12, 1902, have what there is in Wisconsin under control and quarantined. This dreadful disease is often imported into our State from other States and countries, so that we may expect some new cases to develop, until all the States shall enact such laws as will prevent further spread of the same. Arizona, New York (1899), California (1891), Nebraska (1895), Utah (1892), Colorado (1897), have county inspectors, and Wisconsin (1897) and Michigan (1901), have State inspectors. The present Wisconsin law, after five years of testing and rapid decrease of the disease is considered the best, and many other States are now making efforts to secure a like law.

There are several experimental apiaries in Canada under control of the Ontario Agricultural College, also a few in the United States, especially in Colorado, that have done great work for the bee-keeping industry, and their various published bulletins on the same are very valuable. The Wisconsin State Bee-Keepers' Association has asked that an experimental apiary might be had on the Wisconsin experimental farm, but at present there are so many departments asking for aid, that I fear it may be some time before bee-culture will be taken up.

CAUSES OF FOUL BROOD.

1. Many writers claim foul brood originates from chilled or dead brood. Dr. Howard, of Texas, one of the best practical modern scientific experimenters, a man of authority, has proved beyond doubt that chilled or common dead brood does not produce foul brood. I have, in the last five years, also proven his statements to be true in Wisconsin, but I do believe such conditions of dead

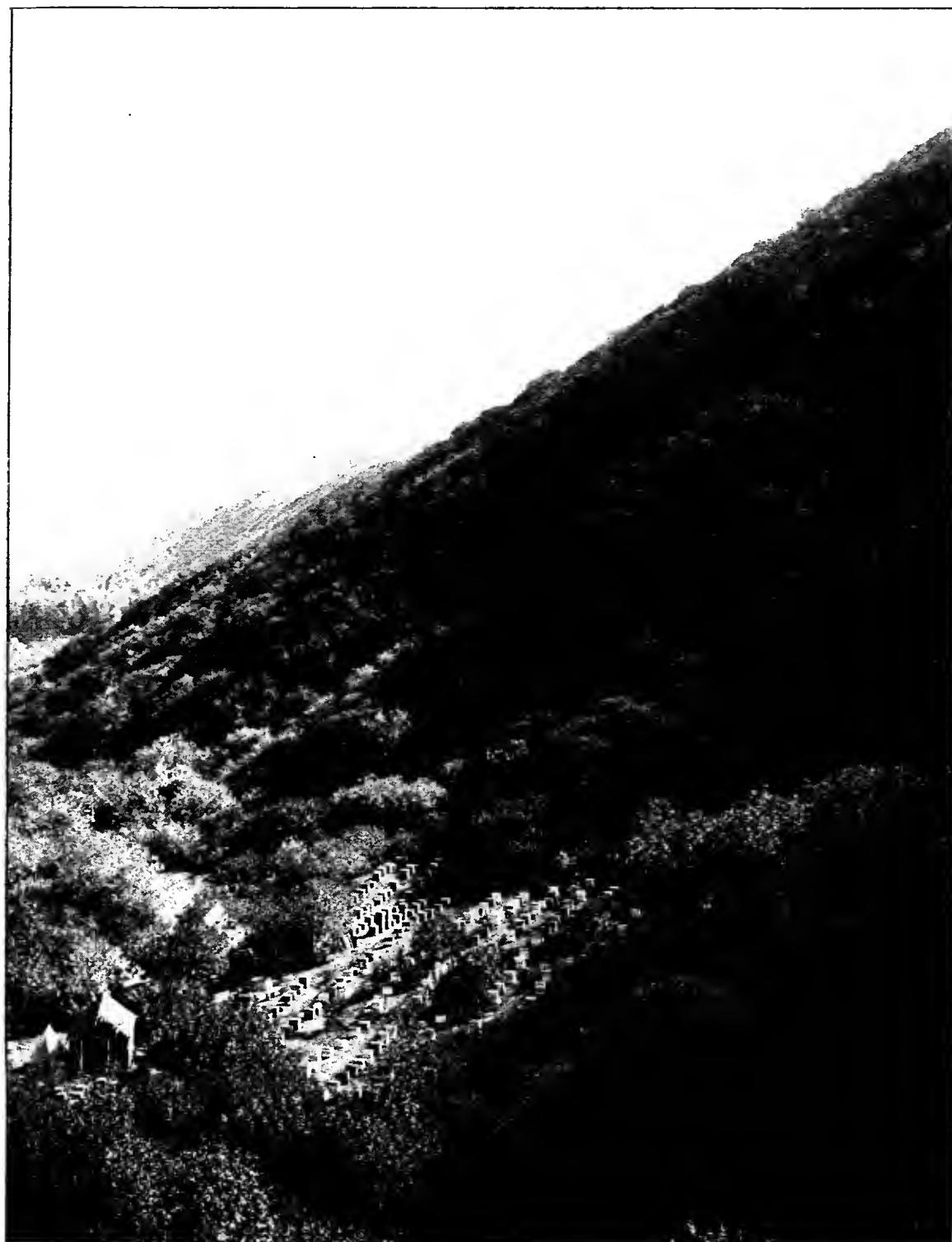
brood are the most favorable places for lodgment and rapid growth of diseases. Also, I do not believe foul brood germs are floating in the air, for, if they were, why would not every brood-comb cell of an infected hive become diseased? I believe that this disease spreads only as the adult bees come in contact with it, which is often through robber-bees. Brood-combs should not be removed from any colony on cold or windy days, nor should they be left for a moment in the direct rays of sunshine on hot days.

2. The foul brood may be caused by the need of proper food and temperature. Generally this disease does not appear to be serious during a honey-flow, but at the close of the honey season, or at times of scarcity, it is quite serious, and as the bees at such times will rob anywhere they can find stores, whether from healthy or diseased combs, it is the duty of every bee-keeper to keep everything carefully protected. Hive-entrances contracted, no old combs or any article with a drop of honey in where the bees can get to it. While honey is coming in from the various flowers, quite a portion is used direct as food for the larval bee, and with such no disease would be fed to the bees. Such fed bees, even in a diseased hive, will hatch, as is often the case. I never knew a case where a bee hatched from a brood-cell that had ever had foul brood in. If the germs of disease are there in the dried scale attached to the lower side-walls, bees will store honey therein, the queen will deposit eggs, or the cell may be filled with pollen, or bee-bread, as some call it. Said honey or pollen, when it comes in contact with those germs of disease, or the food given the young bee, if in the proper temperature, said germs of disease will grow and develop rapidly.

CAUSES OF CONTAGION.

I fully believe if the history of foul brood in Wisconsin were known, nearly every case could be traced to contagion from diseased combs, honey, or from some diseased queen-breeders' cages. Here are some instances where I have traced the history of contagion in Wisconsin:

1. Diseased apiaries, also single colonies, sold either at auction or private sale. Several law-suits have resulted in the settlement of some of the cases.



An Apiary in a Mountain Canyon of California.

2. Brood-combs and various implements from diseased hives, used by other bee-keepers, and borrowed articles.

3. All the bees in an apiary dead from foul brood, and the hives having an abundance of honey in the brood-combs, said combs placed out by the side of hives so that neighbors' bees might get the honey. From those combs I lined robber bees to seven other apiaries, and each time became diseased and were treated.

4. Robber bees working on empty honey-packages in the back-yards of grocery stores and baking factories. Said honey came from diseased apiaries, some located in far distant States, even Cuba.

5. Loaning of hives, combs, extractors, and even empty honey-packages.

6. Buying honey from strangers, or not knowing where it was produced, and feeding it to bees without boiling the honey.

7. Too common a practice of using old brood-combs from some apiary where the owner's bees have died from "bad luck," as he calls it.

8. Queen-bee—by buying queen-bees from strangers and introducing her in the cages they came in. I have traced several new outbreaks of the disease to the hives where such queens were introduced, and the queens came from distant States. To be safe, on arrival of queen, put her carefully alone in a new and clean cage with good food in it. Keep her in there, warm and comfortable, for a few hours before introducing. The shipping cage and every bee that came with the queen should be put in the stove and burned. I do not think there is any danger from the queen so treated, even from diseased hives, but I do know of many cases where disease soon appeared in the hives where the shipping-cage and bees were put in with the colony. The great danger is in the food in said cage being made from diseased honey. I was called to attend a State bee-keepers' meeting in another State and I asked if any there had had experience with foul brood. There was a goodly number of raised hands. Then I asked, "Do any of you think you got the disease by buying queen-bees?" Again several hands were raised. Even bee-keepers there had traced the disease in their apiaries to the buying of queens, and all from the same breeder. If you get queens from

abroad, I hope you will do with her as I have above described. Better be on the safe side.

EXPERIMENTS.

1. A prominent Wisconsin bee-keeper some years ago had foul brood among his bees so bad that he lost 200 colonies before the disease was checked. Having a honey-extractor and comb-foundation machine, he first boiled the hives in a large sorghum pan, then in a kettle all combs were melted after the honey was extracted, the honey was boiled and also the extractor and implements used. The bees were returned to their hives on comb-foundation he made from the wax made from the melted combs, then fed the boiled honey. Several years have passed and there has been no signs of disease in his apiary since.

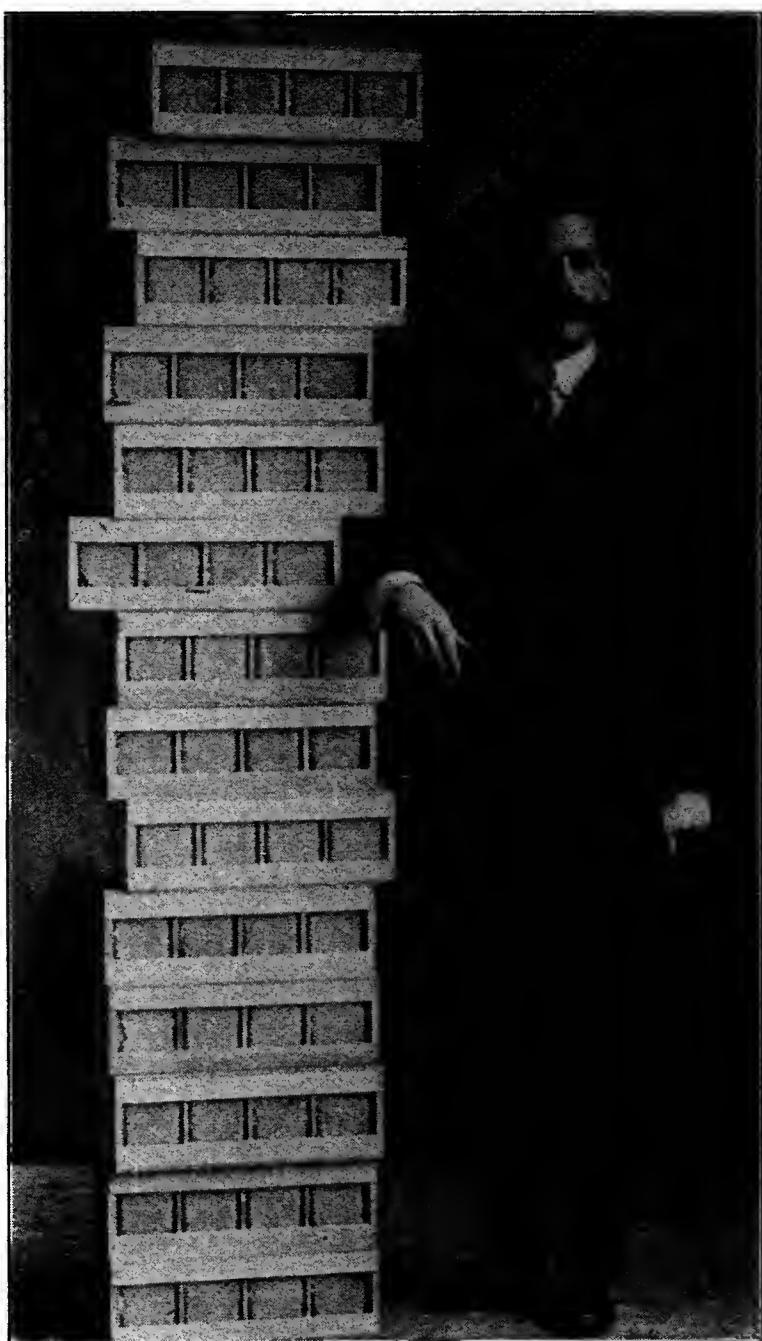
2. Foul-brood germs are not always killed when exposed to a temperature of 212 deg. F. (boiling point) for 45 minutes. But in every case where the combs are boiled in boiling water, and same were well stirred while boiling, no germs were alive.

3. Foul brood in brood-combs is not destroyed when exposed to the temperature of Wisconsin winters of 20 deg. below zero, and in one case I developed foul brood from combs that had been exposed to 28 deg. below zero.

4. Honey, if stored in diseased combs, acts as a preserving medium, and in such cases the germs of disease will remain so long as the comb is undisturbed. Four years at least.

5. Honey or beeswax, or the refuse from a solar or sunheat extractor, is not heated enough to kill foul-brood germs. Several cases of contagion where robber-bees worked on solar extractor refuse or honey.

6. Comb-foundation made by supply manufacturers is free from live germs of disease and perfectly safe to use. To prove this experiment beyond doubt, I took a quantity of badly-diseased brood-combs from several apiaries, and rendered each batch of combs into wax myself on the farm where found. Then on my own foundation mill I made some brood-foundation. I also took quite a quantity more of said wax, went to two wholesale comb-foundation manufacturers, and both parties willingly made my experimental wax into comb-foundation just the same as they



One Season's Honey from One Colony in the Apiary of Rev. Robert B. McCain,
of Kendall County, Illinois.

do every batch of wax. I then divided the various makes of foundation and selected 20 of the best bee-yards in Wisconsin, where no disease had ever been known, had the same placed in 62 of their best colonies, and in every case no signs of disease have appeared. Those same colonies continue to be the best in the various apiaries.

SYMPTOMS OF FOUL BROOD.

1. The infected colony is not liable to be as industrious. Hive entrance with few guard bees to protect their home. Sometimes fine dirt or little bits of old comb and dead bees in and around the hive-entrance, and often robber-bees seeking entrance.

2. Upon opening the hive, the brood in the combs is irregular, badly scattered, with many empty cells which need inspection.

3. The cappings over healthy brood are oval, smooth and of a healthy color peculiar to honey-bee brood, but if diseased the cappings are sunken, a little darker in color, and have ragged pin-holes. The dead larval bee is of a light color, and, as it is termed, ropy, so that if a toothpick is inserted and slowly withdrawn, this dead larva will draw out much like spittle or glue.

5. In this ropy stage there is more or less odor peculiar to the disease; it smells something like an old, stale glue-pot. A colony may be quite badly affected and not emit much odor, only upon opening of the hive or close examination of the brood. I have treated a few cases where the foul brood odor was plainly noticed several rods from the apiary.

6. Dried Scales—If the disease has reached the advanced stages, all the above-described conditions will be easily seen and the dried scales as well. This foul matter is so tenacious that the bees cannot remove it, so it dries down on the lower side-wall of the cell, midway from the bottom to front end of the cell, seldom on the bottom of the cell. According to its stage of development there will be either the shapeless mass of dark-brown matter, on the lower side of the cell, often with a wrinkled skin covering as if a fine thread had been inserted in the skin lengthwise and drawn enough to form rib-like streaks on either side. Later on it becomes hardened, nearly black in color, and in time dries down to be as thin as the

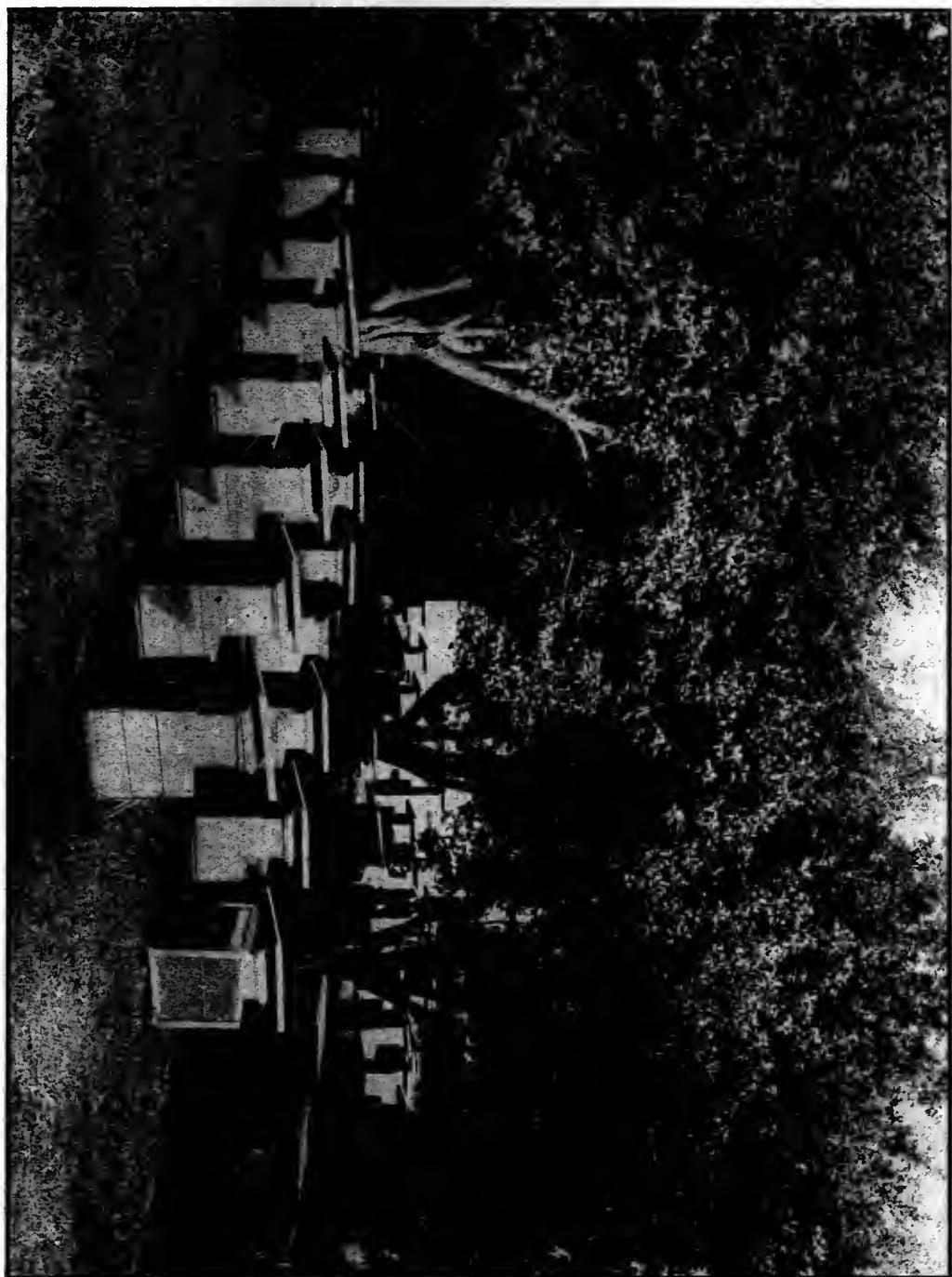
side-walls of the cell. Often there will be a small dried bunch at the front end of the cell not larger than a part of common pin-head. To see it plainly, take the comb by the top-bar and hold it so that a good light falls into the cell at an angle of 75 degrees from the top of the comb, while your sight falls upon the cell at an angle of about 45 degrees. The scales, if present, will easily be seen as above described. This stage of disease in combs is easily seen and is always a sure guide or proof of foul brood. Such combs can never be used safely by the bees and must be either burned or carefully melted. Be sure not to mistake such marked combs in the spring for those soiled with bee-dysentery. The latter have a somewhat similar appearance but are more or less surface-soiled, and will also be spotted or have streaked appearance by the dark-brown sticky excrements from the adult bees.

TREATMENT.

"A bee-keeper who does not discover foul brood, before his nostrils remind him that there is something wrong with his bees, is not the proper person to treat the case." Dr. Howard, in his valuable book on foul brood, states, "I regard the use of all drugs in the treatment of foul brood as a useless waste of time and material, wholly ineffectual, inviting ruin and total loss of bees. Any method which has not for its object the entire removal of all infectious material beyond the reach of both bees and brood will prove detrimental and destructive, and surely encourage the recurrence of the disease." In Wisconsin I have tried many methods of treatment, and cured some cases with each method, but the one that never fails, if carefully followed, and that commends itself is the McEvoy treatment. Canada's foul brood inspector has cured foul brood by the wholesale—thousands of cases.

McEVoy TREATMENT.

"In the honey season when the bees are gathering honey freely, remove the combs in the evening and shake the bees into their own hives; give them frames with comb-foundation starters and let them build comb for four days. The bees will make the starters into comb during the four days and store the diseased honey in them, which they took with them from the old comb. Then in



Apiary of Wm. McEvoy, Foul Brood Inspector of Ontario, Canada.

the evening of the fourth day take out the new combs and give them comb-foundation (full sheets) to work out, and then the cure will be complete. By this method of treatment all the diseased honey is removed from the bees before the full sheets of foundation are worked out. All the old foul-brood combs must be burned or carefully made into wax, after they are removed from the hives, and all the new combs made out of the starters during the four days must be burned or made into wax, on account of the diseased honey that would be stored in them. All the curing or treating of diseased colonies should be done in the evening, so as not to have any robbing done, or cause any of the bees from the diseased colonies to mix and go with the bees of healthy colonies. By doing all the work in the evening it gives the bees a chance to settle down nicely before morning, and then there is no confusion or trouble. This same method of curing colonies of foul brood can be carried on at any time from May to October, when the bees are not getting any honey, by feeding plenty of sugar syrup in the evenings to take the place of the honey-flow. It will start the bees robbing and spread the disease to work with foul brood colonies in warm days when the bees are not gathering honey, and for that reason all work must be done in the evenings when no bees are flying.

"When the diseased colonies are weak in bees, put the bees, two, three, or four colonies together, so as to get a good-sized colony to start the cure with as it does not pay to spend time fussing with little, weak colonies. When the bees are not gathering honey, any apiary can be cured of foul brood by removing the diseased combs in the evening and giving the bees frames with comb-foundation starters on. Then also in the evening feed the bees plenty of sugar syrup and they will draw out the foundation and store the diseased honey which they took with them from the old combs; on the fourth evening remove the new combs made out of the starters and give the bees full sheets of comb foundation and feed plenty of sugar syrup each evening until every colony is in first-class order. Make the syrup out of granulated sugar, putting one pound of water to every pound of sugar, and bring it to a boil. As previously stated, all the old comb must be burned or made into wax and so must all new

combs made during the four days. No colony is cured of foul brood by the use of any drug."

A. I. Root, of Medina, Ohio, says: "The starvation plan in connection with burning the combs and frames and boiling the hives has worked the best in treating foul brood. It never appeared after such treatment, though it did in some cases where hives were honey-stained and not boiled, thus confirming the theory or fact of spores."

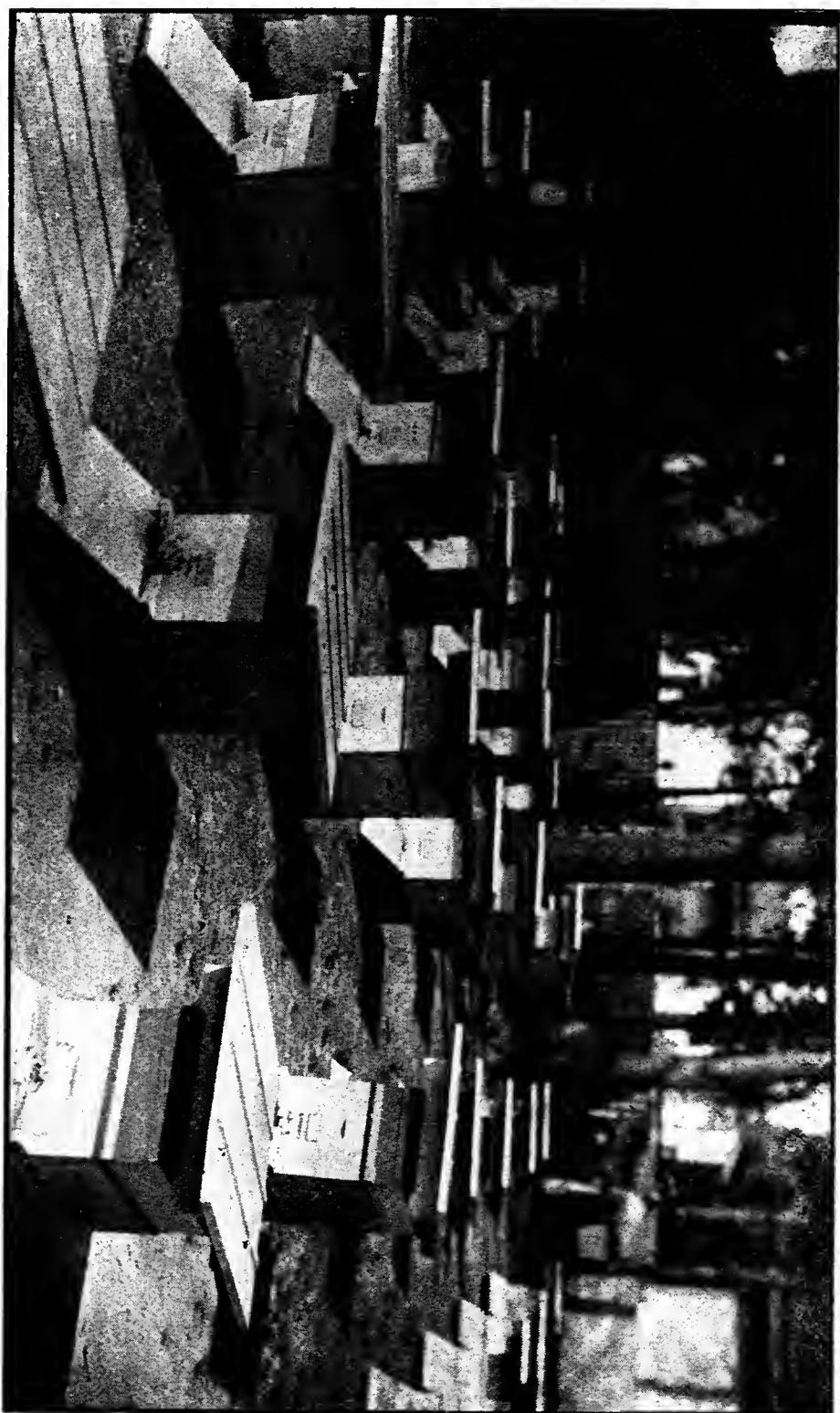
All the difference from the McEvoy treatment that I practice is this: I dig a deep pit on level ground near the diseased apiary, and after getting a fire in the pit such diseased combs, frames, etc., as are to be burned are burned in this pit in the evening, and then the fresh earth from the pit returned to cover all from sight. Often I use some kerosene oil, a little at a time being poured on old brood-combs or those having much honey in, as they are hard to burn. If diseased combs with honey in are burned on the surface of the soil there is great danger; the honey when heated a little will run like water on the soil, and in the morning the robber-bees will be busy taking home the diseased honey that was not heated enough to kill germs of foul brood.

I also cage the queen while the bees are on the five or six strips of foundation. It helps to keep the colony from deserting the hive and going to other colonies.

R. L. Taylor, Michigan University experimental apiary, reports: "The plan that the colony be shaken out into another hive after being allowed to build comb for four days, I have proven in 100 cases to be unnecessary."

In Wisconsin, I, too, have cured several cases by the one transferring, when honey was not coming in very freely, but it is better, and a great saving of time to both bees and owner, to exchange in three or four days those foundation starters, for full sheets of foundation. Diseased brood-combs, and those with honey in, if melted in a sun or solar extractor, the wax, honey or residue is not hot enough to kill germs of foul brood. This I have proven by several experiments. It must be boiled and well stirred while boiling to be safe.

I do not believe in, or practice, burning any property, such as hives, bees, beeswax or honey that can be safely treated and saved. Many times it is poor economy to save all, and as so



Apiary Once Owned by J. D. Everett, of Cook County, Illinois.

many bee-keepers are not so situated as to keep all diseased material from robber-bees while taking care of it, the best and only safe way is to burn the diseased combs and frames.

UTAH.

Utah has county inspectors, and from one who has remarkable success I copy the report of his method of treatment:

"Wherever found, it should be dealt with earnestly and with dispatch. If the colony is weak, I recommend smothering the bees, and in order to do this without letting a bee escape, take a tablespoonful of sulphur and place it in the hive entrance of the hives; if there is any breeze, turn the hive so it will blow in the entrance. Then fire the sulphur and it will soon kill the bees. This should be done early in the morning before any of the bees are flying, as one bee escaping from the hive might carry the disease to any colony with which it may take up its abode. If the colony is a strong one, I would keep the entrance partly closed so as to prevent any other bees from getting in. Then as soon as fruit-blossoms come out so the bees can obtain honey I treat them. I procure an empty box of any kind so it is clean, then find the queen, put her in a screen-wire cage which is easily made. Take a small piece of screen, roll it up and tie a string around either end, cork up one end, then place the queen and a few workers for company in the cage and place in the other end cork. Put same in this box and shake all the bees out of their hive into the box. This must be done in the evening when no bees are flying. Keep the queen in this box 24 to 48 hours, allowing the bees to fly in and out as they please. Next take a clean hive with good, healthy combs or foundation and shake bees into it, letting the queen go and they will be free from disease. The old combs are melted into wax, bringing same to a good boil. Often washing with boiling water any hives or implements that might contain disease. Wher- ever strictly followed this has effected a cure."—C. Wilcox, Emery Co., Utah.

PICKLED BROOD.

Some seasons pickled brood is quite bad among bees, and in a few cases I have known it to reduce large colonies, even large apiaries to doubtful hopes,

but those same colonies, after I gave them treatment, were in a month free from all disease. Sometimes it takes as careful handling as if foul brood. I do not believe it is contagious, for all I have seen in 60 colonies in one apiary badly reduced by it. As an experiment one of my out-apiaries had 50 colonies at one time with pickled brood. I treated them and all were soon free from dead brood. At the same time I took 10 of the worst brood-combs where at least two-thirds of the brood was dead, and placed those combs in other strong, healthy colonies. They at once cleaned out the dead brood and reared as nice brood as one could ask for.

SYMPTOMS.

The larval bees (in last of May and through June) show light-brown spots; a little later the cappings have small holes in—the cappings are not sunken or dark-colored as in foul brood. The dead bee will be first swollen, with a black head, dried to a hard bunch and often turned up—Chinaman-shoe-like. The skin of the dead bee is quite tough, and, if punctured, the thin, watery fluid of the body will flow as freely as water, often a little yellow or brownish-colored from the dissolved pollen from the abdomen of the bee. It has very little or no smell, does not at any time stick to the walls of the comb, is easily pulled out of the cell, is never ropy or sticky, and if the colony is properly cared for, the bees will take care of themselves. Plenty of liquid, unsealed honey and pollen near the brood, and hives so protected as to keep bees and brood comfortable on cold days and nights.

Never put bees on old black brood-combs, or those with dead brood in; better make wax of the combs and give the bees full sheets of brood-comb foundation.

TREATMENT.

Keep all colonies strong, with plenty of unsealed honey near the brood, and if hives are properly sheltered so as to be warm on cold days and nights there will be little or no pickled brood. If the queen is old, shows signs of weakness by putting several eggs in one brood-cell and nursing several others, so that the brood is patchy, I would kill such a queen, feed the bees a little, and when queen-cells were started, remove them

all and give them a queen and bees, between two of her own brood-combs from a hive where she has lived. I do not think pickled brood is often the fault of the queen, but rather a lack of proper food and heat in the hive. In most cases a shortage of liquid honey, or moldy pollen, even in hives with plenty of sealed honey in the outer combs. There is a time in spring in Wisconsin between dandelion and white clover bloom when there is no honey coming in from flowers and often cold days and nights so that the live bees consume the liquid unsealed honey first, and cluster in a compact body to keep warm, the result often is the larval bee just changed from the egg to a tender little grub, is either starved, half-fed or chilled so that it grows slowly and too often it dies, and then it is we first notice this about the time white clover honey begins to come in. In other parts of the State, where pickled brood appeared it was from the same cause, and at other dates, which was due to a difference of time of honey bloom.

Wherever I fed daily some honey or even sugar syrup, and kept the hive warm, all dead brood soon disappeared; while in the same apiaries other colonies affected and not so treated, continued for some time, but got rid of it as soon as treated.

Strong colonies of bees in the fall with a young laying queen, and an abundance of good honey sealed or capped by the bees, if properly cared for during winter whether in the cellar or in chaff hives, wintered out of doors in sheltered location, seldom have pickled brood, chilled or other dead brood, or dysentery, and are the colonies that give their owner profit.

BLACK BROOD.

Black brood is another fatal and contagious disease among bees, affecting the old bees as well as the brood. In 1898, 1899 and 1900 it destroyed several apiaries in New York. Last year I found one case of it in Wisconsin, which was quickly disposed of. Dr. Howard made more than a thousand microscopical examinations and found it to be a distinct form of bacteria. It is most active in sealed brood. The bees affected continue to grow until they reach the pupa stage, then turn

black and die. At this stage there is a sour smell. No decomposition from putrefactive germs in pickled brood. In black brood the dark and rotten mass in time breaks down and settles to lower side-walls of the cell, is of a watery, granulated, syrupy fluid, jelly-like, is not ropy or sticky as in foul brood, and has a peculiar smell, resembling sour, rotten apples. Not even a house-fly will set a foot upon it.

TREATMENT.

Best time is during a honey-flow, and the modified McEvoy plan, much as I have treated foul brood, by caging the queen five days, remove the foundation starters and give full sheets, keeping queen caged five days longer. As great care should be taken of diseased hives, combs, honey, etc., as in foul brood.

DYSENTERY.

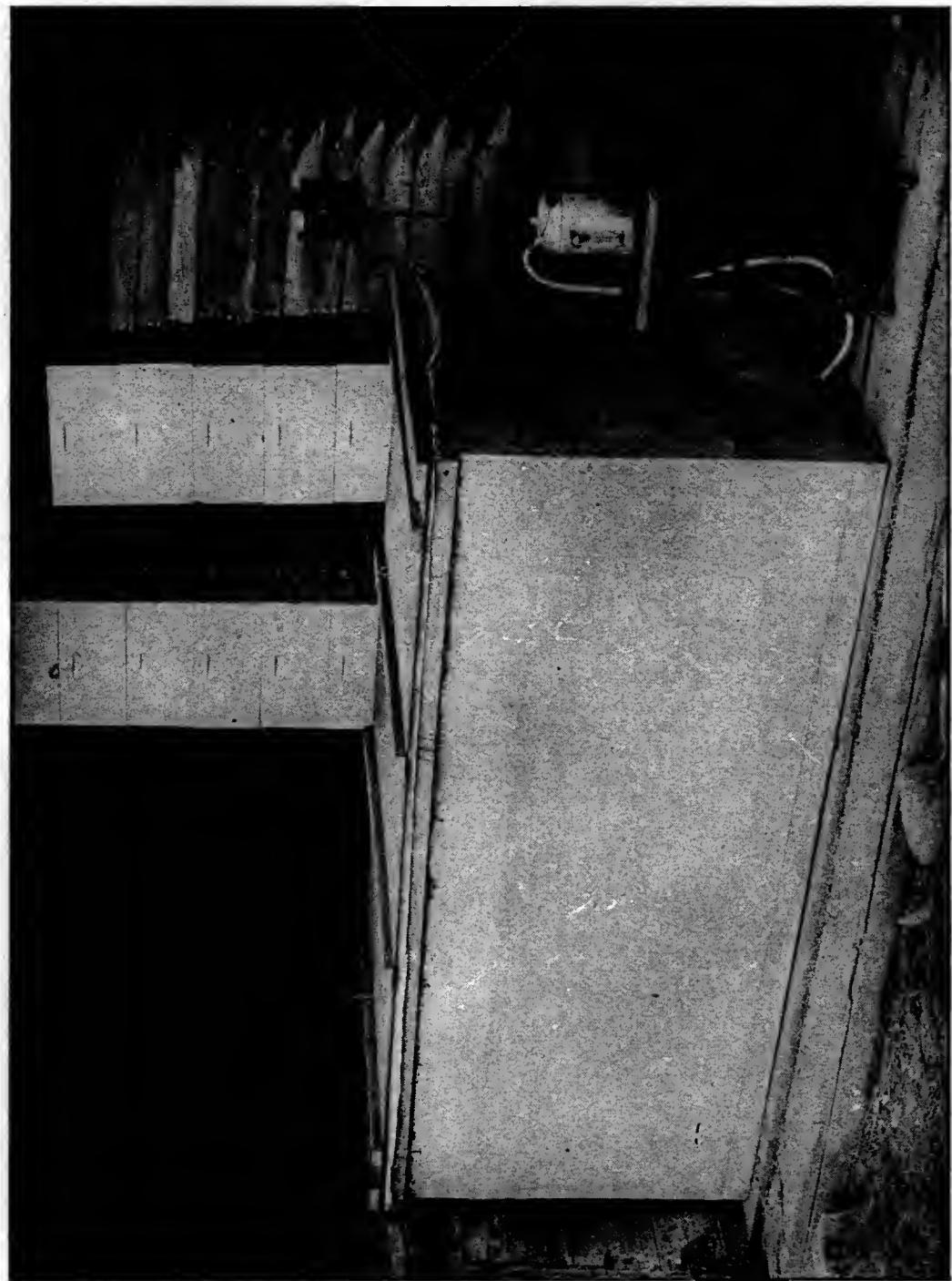
Dysentery among bees in Wisconsin in the spring of the year, often is quite serious. Many colonies die with it. Dysentery is the excrements of the old bees; it is of brownish color, quite sticky and very disagreeable-smelling, and is sometimes mistaken for foul brood.

CAUSES.

1. Bees confined too long in the hives, so that they can no longer withhold their excrements, and are compelled to void the same on the other bees and combs.
2. Poor winter stores gathered in the fall from honey-dew, cider-mills, sorghum mills, rotten fruit, also some kinds of fall flowers.
3. Old and especially moldy pollen or bee-bread.
4. Hives too cold or damp. If moisture from the breath of the bees is not carried out of the hive by some means, such as through a deep cushion of some kind over the bees that will absorb moisture and at the same time retain the heat, or by some means of ventilation, so that all is dry and comfortable. If mold forms on the combs or cellar so damp as to form mold, there is great danger the bees will have dysentery and die.

TREATMENT.

1. First of all, have an abundance of combs of sealed clover or basswood honey in brood-frames carefully saved, and see that each colony is wintered on



Tank for Fumigating Foul-Broody Combs with Formaldehyde.

such food. Three or four such combs will winter a fair colony safely if confined on those combs late in the fall and the hive contracted to fit the same. This is one of the most important conditions for success in wintering.

2. If in the fall the bees have gathered this unwholesome honey from the above-named sources, it should all be extracted and either exchanged for those honey-combs, or feed the bees good honey or sugar syrup until winter stores are secured. This should be done before cold weather in the fall.

3. Hives contracted and made comfortable, whether in cellar or outdoors.

4. If wintered in chaff hives outdoors with feed as above directed, and there come one or two warm spells during winter so that bees can have a cleansing flight, they will not have dys-

entery or dead brood, and will be much stronger when clover opens.

If wintered in the cellar the bees will not need as much honey, and if the winters are generally long with doubtful warm spells, the cellar will be best. But to keep the bees from dysentery, so often fatal to cellar-wintered bees, they should have such winter stores as above spoken of, then the cellar kept at a uniform temperature, about 42 deg. F., ventilated so the air is fresh, and no mold will form in the cellar. Fresh air-slacked lime on the bottom of the cellar may help if it is damp or has poor air.

5. Dysentery will not appear if bees are kept on sugar syrup, or best-grade white clover or basswood honey, and are in a dry place, either sheltered by cellar or chaff-hive.

FORMALDEHYDE EXPERIMENTS

Formaldehyde, by the medical experts, is now considered the best of all disinfectants; I have great faith that we may yet learn of its use, and save infected foul-broody combs.

Mr. C. H. W. Weber has conducted some valuable experiments. Early in 1903 I decided to do some experimenting, having inspected several infected apiaries. We got a carpenter with well-seasoned lumber to make some perfectly air-tight boxes to hold brood-frames, two tiers deep. Mr. Weber's lamp was used in several trials. Where we used a greater amount, and longer confined than instructions called for, the combs with all cells unsealed, containing dried scales of foul brood, after fumigating and airing were placed in hives with bees on them. The chemical action was such that the bees at once cleaned them out, and no signs of disease has appeared in them since. But in those combs having honey or pollen in the

infected cells, or those capped over with brood underneath, they were so covered that the gases did not destroy the disease, for those treated July 27, in 41 days each of those combs had foul brood again.

To prove that the gases do not go through wax-cappings, I took some healthy hatching brood, fumigated it, then took it out and cut away the cappings, and some of the bees had life enough to crawl.

I believe we should go slow and do careful experimenting. I know old, diseased combs are worth more rendered into wax, or those containing honey or pollen in infected combs are not safe to use again. A sheet of comb foundation is worth far more. I believe it is possible, if carefully done to fumigate infected combs where there is nothing over the disease, so that those combs can be saved.

N. E. FRANCE.
Platteville, Wis., March 17, 1904.

PROCEEDINGS
—OF THE—
Sixteenth Annual Session
—OF THE—
ILLINOIS STATE BEE-KEEPERS' ASSOCIATION
Held in the Supreme Court Room at the State House,
—ON—
TUESDAY AND WEDNESDAY, NOV. 20 and 21, 1906



Tuesday morning, President Smith said: "Members of the Association, I have to congratulate you that we have been permitted to meet again, in our sixteenth annual session. While the year just past has been one of disappointment to bee-keepers, we all look forward to the coming year with hopes that it may be a year of plenty and success. I have met more bee-keepers this year in the State of Illinois than in any other year. They all seem encouraged in regard to wiping out foul brood, wherever it has been known to exist. As to black brood, I have not seen it. Not having learned any difference I call it all foul brood. Being doubtful about it, I sent a sample of it to Washington and it was pronounced, not black, but common foul brood, as I had thought. While our neighboring States—Michigan, Indiana and Ohio—have it, it may develop within our territory, sooner or later.

I wish to thank you, gentlemen, for courtesies in the past. We will now proceed with the business of our annual meeting. The Secretary will please read the minutes of the last meeting."

Secretary Stone said that the proceedings of the previous meeting all had been published in the Annual Report, and it seemed unnecessary to read the minutes since they were already in the hands of the members.

Mr. Dadant moved that the printed report be accepted as the minutes of

last meeting, which motion was seconded, and, on being put by the President, was carried.

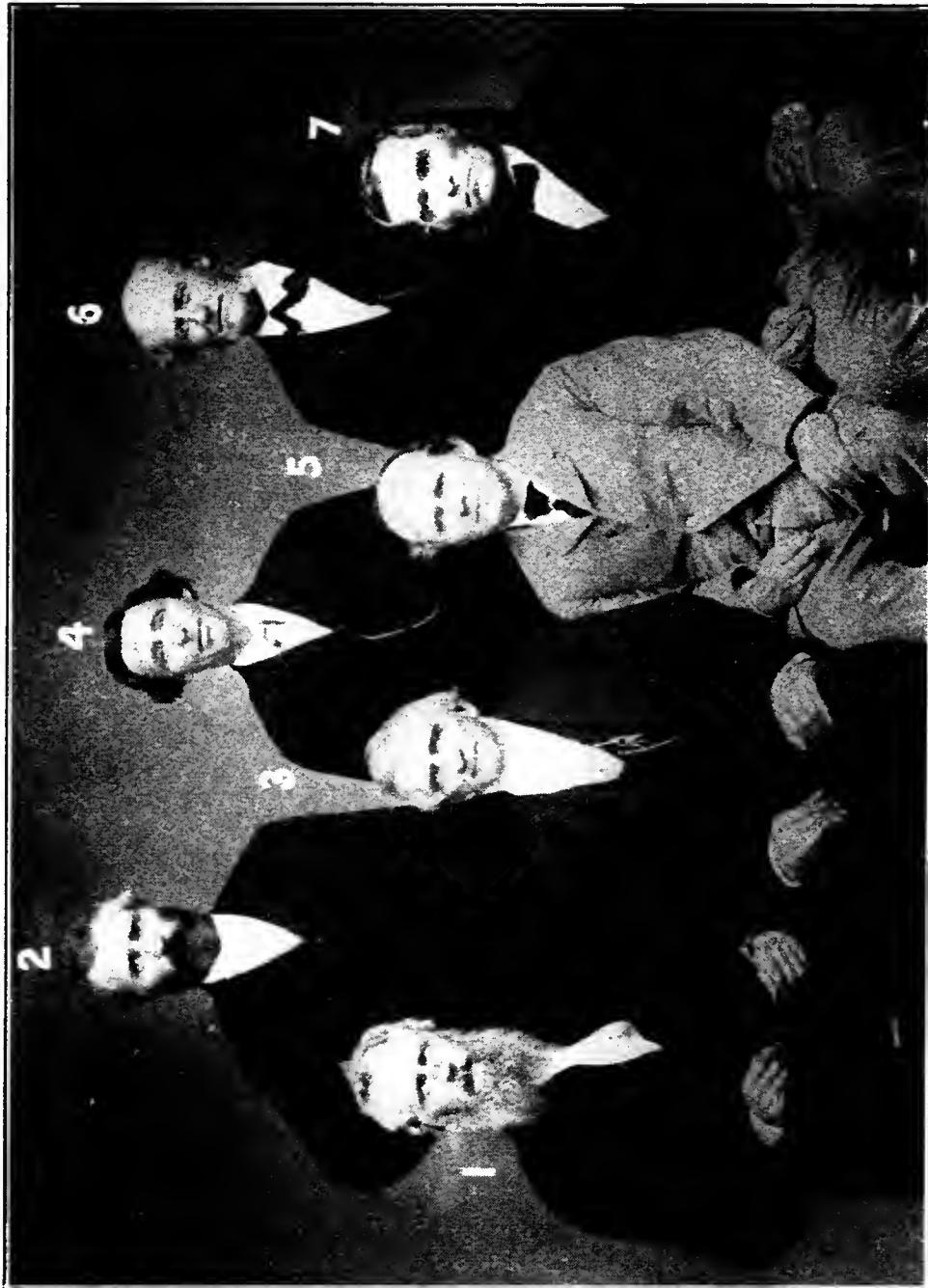
The President called for the Secretary's Report:

REPORT OF THE SECRETARY.

The Association expressed the wish last year that along with the other work of the Secretary he have printed some cards to be used in an effort to increase the membership. The first move in this direction was to have prepared some return postal cards and these were sent to all the Crop Reporters throughout the State. We received in this way 1130 names of bee-keepers. We also secured another list containing 1186 names. After arranging the two lists alphabetically, and comparing them, we found only 94 duplicate names, and a total of 2222 names. In all this number only 94 duplicate is an evidence of thousands of bee-keepers still, whose names we have not been able to get. With 873 names received through the Crop Reporters of the State after canceling duplicates, they reported 20,361 colonies of bees, which was an average of 23 1-3 colonies per bee-keeper.

Number of names reporting number of colonies not known, were 163. Including the numbers recorded in our 5th Annual Report as living in Illinois, with the above-named numbers, we have a list of over 2450 bee-keepers in Illinois, and with an average of 23 colonies we

Group of Bee-Keepers of Nearly Forty Years Ago



1. Aaron Benedict, of Ohio.
2. Dr. G. Bohrer, of Indiana.
3. A. H. Hart, of Wisconsin.
4. A. F. Moon, of Michigan.
5. Adam Grimm, of Wisconsin.
6. N. C. Mitchell, of Indiana.
7. Elisha Gallup, of Iowa.

(So far as known, Dr. Bohrer is the only one of the group still living—now in Kansas.)

have a total of 56,350 colonies, which with a very low average of 40 pounds per colony would be a possible 2,254,000 pounds of honey in one year.

In letting the bids for our 5th Annual Report, George W. York, of the American Bee Journal, being the lowest bidder, got the contract for 1000 copies—300 of which were to be cloth-bound—for all of the members of the State Association as well as for those who came through other affiliated associations of the State.

As our 6th annual report is not likely to be out in time to place copies in the hands of the legislators, we do not think that more than 500 copies can be used, with as many of that number bound in cloth as we are likely to have members.

In one or two cases our membership blanks were returned to us, wherein the writer said: "My bees have never had foul brood, and I do not see any use of a foul brood law." But when this man's bees got foul brood he was the first one to cry out; "I have just as good a right to protection as you members of the Association have, for I pay as much taxes as you do." To be sure he has in the eyes of the law,—does he get it? It is not reasonable to expect the inspector to leave a man who has done all he can to help procure a foul brood law till last, and go first to the man who did not want the law, and did all he could to discourage its passage.

Some bee-keepers who live only for self, and know nothing about foul brood, have even told their representatives that they did not care whether we had a foul brood law or not, as their bees had never had it, and they did not fear it.

In concluding, I wish to say, the action which the National Bee-Keepers' Association took when it passed a resolution allowing all bee-keepers' associations throughout the United States (or the entire continent, I believe) to join them in a body through their respective secretaries on payment of 50 cents per member, did more to promote bee-keepers' organizations, and increase the membership of those already formed, than any act that we can do to help ourselves. All bee-keepers are anxious to be members of the National, as it assists them when being imposed upon,

so long as they are in the right. And every association should sacrifice one-half its fees and thereby help their own and the National Associations.

We were told during the year by the General Manager that our State stood at the head in the list of members to the National. (Later we see in the Report of the National that Illinois stands 2nd, with 282 members; Wisconsin 1st, with 307 members; New York 3rd, with 210, and California 4th, with 206.)

We have great faith that our membership will never be any smaller, but hope for greater numbers as the years of prosperity for bee-keepers come this way. We can ask a bee-keeper with the best of grace to join our Association, because we are getting memberships in the National with the same \$1.00 fee.

JAS. A. STONE, Sec.

President—The next thing in order is the Treasurer's Report.

(See next page)

Mr. Stone—Mr. President, maybe I ought to have given my financial report at the same time with my report as Secretary. It corresponds exactly with the report of the Treasurer.

Treasurer Becker read a certificate from the State Bank of Pleasant Plains as to the funds in their hands to his credit as Treasurer, and this was ordered filed as a part of his report.

Secretary Stone—I will say that every order has to be signed by the President and Secretary before Mr. Becker gets it. My account must agree with Mr. Becker's.

The Secretary read his financial report as follows:

(See next page)

Pres. Smith—You have heard the report of the Secretary.

Mr. Dadant—As it has been customary to appoint a committee to audit the financial reports of the Secretary and Treasurer, I move that the President appoint such a committee.

The motion received a second, and the President appointed as such committee Mr. Dadant and Mr. Hyde.

Treasurer's Annual Report

From Nov. 20, 1905 to Nov. 20, 1906

To the Illinois State Bee-Keepers' Association:

RECEIPTS

Nov. 20, 1905—Cash on hand in State Fund.....	\$ 947.78
July 15, 1906—Received from State Treasurer.....	1,000.00

1905

	DISBURSEMENTS.	\$ 1,947.78
Nov. 22—Order No. 17—C. P. Dadant.....	\$ 4.05	
“ “ 18—J. E. Johnson	4.25	
“ “ 19—Chas. Becker.....	.90	
“ “ 20—J. Q. Smith	5.60	
“ “ 21—Sheriff Brainerd.....	2.00	
Dec. 11— “ 22—Jas. A. Stone.....	45.05	

1906

Jan. 11— “ 23—George W. York & Co.....	44.50
June 1— “ 24—J. Q. Smith	89.00
“ 26— “ 25—George W. York & Co.....	386.75
“ 29— “ 26—Chas. Becker.....	25.66
July 5— “ 27—Frank Hinderer.....	12.00
June 29— “ 25—J. Q. Smith	112.65
Aug. 1— “ 28—J. Q. Smith	108.40
Sept. 1— “ 29—J. Q. Smith	131.75
“ 6— “ 30—Chas. Becker.....	25.75
Oct. 3— “ 31—J. Q. Smith	19.90
“ 18— “ 32—J. Q. Smith	60.00

Total paid on orders..... \$1,078.21 1,078.21

Balance on hand in State Fund..... \$ 869.57

Association Fund

1905

Nov. 20—Balance on hand	\$ 92.83
Dec. 14—Received from Secretary Jas. A. Stone	25.41

1906

Jan. 20—Received from Secretary Jas. A. Stone	14.00
Feb. 28— “ “ “ “	25.00
“ 28— “ “ “	8.75

Total Receipts..... \$ 165.99

1905

EXPENDITURES

Dec. 11—Order No. 22 paid to Jas. A. Stone	\$ 25.25
Balance on hand in Association Fund.....	\$ 140.74
“ “ State	869.57

Total amount on hand both Funds..... \$1,010.31

CHAS. BECKER,

Audited and found correct. Treasurer Illinois State Bee-Keepers' Association.

C. P. DADANT,

W. H. HYDE, Auditing Committee.

Secretary's Financial Report

1905

RECEIPTS

Nov. 20—To balance on hand.....	\$ 6.41
Dec. 2—To 20 fees from E. D. Woods, Sec., W. Ill. Ass'n.....	5.00
“ 21—To 1 “ received at Chicago, “25

1906

Jan. 10—To Chi-N. W. Ass'n, Sec. Moore 56 mems. at 25c.....	14.00
Feb. 27—To “ “ “ 35 “	8.75
Oct. 20—To N. Ill. and S. Wis. 6 fees at 25c. B. Kennedy	1.50
Nov. 20—To Fees total rec'd for the year in Ill. State 145 at 50c.....	72.50

1905

DISBURSEMENTS

Dec. —By overcharge from page 70.....	\$.25
“ 11—By Chas. Becker for fees to date.....	25.41

1906

Jan. 17—By Chas. Becker Check H. F. Moore Fees Chi.-N.-W.....	14.00
Feb. 27—By “ “ “ “	8.75
“ By Check to Chas. Becker for Fees to Ill. State	25.00
Nov. 20—By Cash (check).....	35.00

Audited and found correct.

\$108.41 \$108.41

C. P. DADANT,

W. H. HYDE, Auditing Committee.

JAS. A. STONE, Sec.

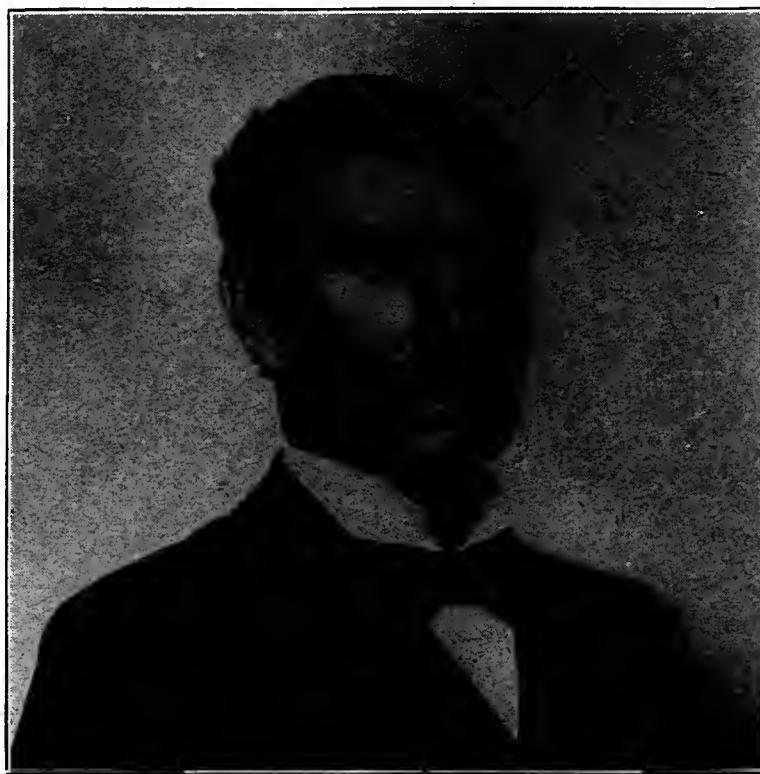
Pres. Smith—What further business have we before us now? Are there any reports of committees to be heard?

It was suggested that reports of committees be postponed until the afternoon meeting.

Pres. Smith—Mr. Hyde, is there not something from your part of the country that would be of interest at this meeting?

Pres. Smith—Is there any other busi-

a number of the worker-bees—sometimes only one or two, sometimes dozens of them—begin to lay eggs in the cells here and there. Scientists affirm that the drone-laying ability is found in bees that have probably received a greater amount of the royal jelly than the average larvæ during the course of their development. This jelly or pap, produced by the salivary glands of the nurses, is fed exclusively to the queen-



PRESIDENT J. Q. SMITH.

ness that should be transacted this morning?

Mr. Becker—It might be a good idea, since there are so many visitors in the city today, for us to adjourn early and meet again at 1:30 p. m.

On motion the meeting adjourned till 1:30 p. m.

FIRST DAY—AFTERNOON SESSION.

The afternoon session was opened with the reading of the following paper by C. P. Dadant, President of the National Bee-Keepers' Association, on

DRONE-LAYING WORKERS

When a colony of bees becomes hopelessly queenless, it often happens that

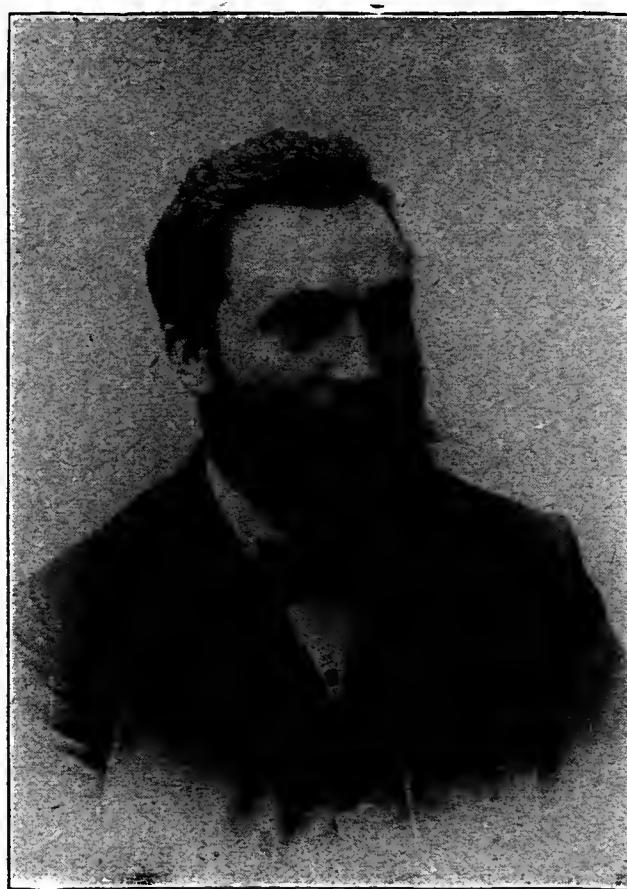
larvæ during the entire time of their development, while a coarser food, containing pollen or bee-bread, is fed to the larvæ of the worker-bees during the last stages of their larval existence. It is asserted that those workers that receive a little more than their share have ovaries partly developed; and while they are entirely unable to become impregnated, owing to the rudimentary condition of both spermatheca and ovaries, yet the rudimentary ovaries may produce eggs in small quantity. These eggs, like those of queens that have been unable to mate, hatch drones only. It is probably unnecessary to state the well-known fact of parthenogenesis in bees, which is the faculty of

laying eggs by virgins, eggs which invariably produce males. This discovery is due to the immortal Dzierzon, and was long doubted by many, but is capable of absolute demonstration.

When a colony becomes hopelessly queenless, that is, when there are no eggs or young larvæ from which may be reared queens, such bees as may have the ability to lay eggs seem to consider it a duty to replace the missing queen within the limit of their powers.

when the combs are removed from the hive with a little care.

Sometimes the laying of an old queen that has lost her fertility is mistaken for that of drone-laying workers. This is of some importance, for although a queen may be successfully introduced to a colony containing a laying worker, it is almost impossible to succeed in the introduction of a new queen, if there is an old queen in the hive.



C. P. DADANT.

One or more worker bees assume this duty. But their eggs are laid irregularly, sometimes several in one cell, and sometimes on the side-walls of the cells instead of at the bottom. I have myself seen a half-dozen or more workers laying, at the same time, on a comb which had been taken out of the hive for inspection. Such a sight may be witnessed more readily with the Italians than with the common bees, because they are less excitable and do not become frightened and rush about

The only way to make positively sure of the presence of an old queen is to search for her. But there is a slight difference between the laying of a worn-out queen and that of one or more laying workers. The old queen lays but few eggs, and these are always at the bottom of the cells. She rarely lays more than one egg in a cell, this incongruity being committed only by laying workers, or sometimes by very young and very fertile queens which lack room, and have not yet reached

their full ability in regular laying.

I have stated that it is easier to introduce a queen to a colony containing a laying worker than to a colony containing an old queen, unless this queen has been found and killed. I know that this statement will not be concurred in by many others, for I have often seen it stated that it is impossible to introduce a queen to a colony having laying workers; yet I have never failed. I speak from actual experience. Before I state how I have succeeded, permit me to say that a colony having laying workers is rarely worth saving. Yet there are times when such colonies are still powerful enough to make a good colony if a queen is successfully given them early enough in the season. The apiarist must decide this point for himself.

In order to show how to succeed, I will state under what conditions I tried the introduction of queens in drone-laying colonies. We used to import queens on a very large scale. This was in the '80's. We used to receive from Italy about a hundred queens per month during the summer months. As these queens were fatigued from their long journey, we always introduced them to full colonies of bees in our apiary, before re-shipping them to our customers in the United States. The price obtained was sufficient to reward us for such a course, and when a queen had been for 3 or 4 weeks in a full colony, she had fully regained all her lost vigor, and was much more likely to be satisfactory to the purchaser than if she had been held in a very small nucleus or in a queen-cage. Besides, this introduction gave us new blood in the apiary. Owing to this course we had to kill a number of queens each month, usually of the common race or of the hybrids. These spare queens were quite often prolific, and it seemed a pity to kill them. It was then that I attempted to save a good queen and a worthless colony at the same time, by introducing the one into the other, by the ordinary method of caging the queen for 48 hours in the hive, and releasing her by inserting a piece of comb honey in place of the stopper of the cage. This method has never failed, and I attribute it to the fact that the queen introduced was in each instance a vigorous laying queen in the fulness of her power.

In the introduction of queens that have been traveling there is almost always a delay in the laying; the new queen does not take possession of the empty cells immediately, and for this reason the bees that have one or more laying workers will have an animosity towards her that they will not entertain towards a queen that is able to lay eggs at once, and thus show her ability to fill the needs of the colony.

My conclusion, therefore, is that although it is more difficult to introduce a queen to a drone-laying colony than to a normal colony, this may be successfully done by the above method. But I would never risk a queen which has been confined to a cage for some days to any but a normal colony made queenless just before introducing her.

A good laying queen introduced to a drone-laying colony in May—if this colony has still enough bees to take care of her brood—will rear a populous colony for the fall crop of honey, and will often prove a paying investment. For this reason, queens bought from reliable Southern breeders in early spring are a great help to the Northern bee-keeper.

C. P. DADANT.

Mr. Dadant's paper was received with marked attention and brought out a most interesting and profitable discussion, though Mr. Dadant apologized for his subject. Nearly all the members participated in the exchange of ideas and relation of their successes and mistakes along the line of experience which was under consideration.

Mr. Black asked if the drones produced by working bees were as good for the fertilization of a queen.

In answering the inquiry Mr. Dadant said that such drones were smaller, and on that account less desirable for the purpose.

Mr. Black told of his experience with a very small queen—the smallest he had ever seen—that was with his bees for 4 years, to his certain knowledge, proving herself a good queen. He recognized her by her size.

Mr. Kildow and Mr. Pyles told of putting unfertilized queens into a hive before they had taken their wedding flight, and still proving good queens. There was doubt expressed by some members as to whether they were unfertilized, or whether there might not have been other queens in the hives so treated.

Mr. Stone—I was induced to give Mr. Dadant this subject because of the little experience many of us have had in handling queenless colonies with laying workers, and the questions that arise in regard to their management.

Mr. Johnson said he believed there were generally a good many laying workers in the hive. He had never lost queens, but united them by putting smaller colonies on top.

Mr. Black spoke of his method of uniting colonies; that formerly he was

to fight than if they are not well satisfied in that respect. Colonies that have drone-laying queens will be more successfully handled in the spring, both in the matter of uniting them and in the introduction of a new queen.

Pres. Smith—Reports of committees are now in order. Is the auditing committee ready to report?

Mr. Dadant, as chairman of the auditing committee reported that the accounts were found to be correct, but made a suggestion as to the way the



1ST VICE-PRESIDENT J. E. JOHNSON.

very careful about handling them gently, but experience has taught him it is better to handle them more vigorously.

Mr. Dadant said that in the matter of uniting a colony containing laying workers he thought that the entire secret was in what Mr. Black had said, and in allowing the bees to feed before they were disturbed, in which case they would be much more peaceable when united. In certain seasons the tendency among bees is to fight. When you open a hive, if they are full of honey there will be much less tendency

statements might be presented so that there would be less work for the committee in checking up the accounts.

Mr. Becker—Do you mean that I should keep just one account? I have been keeping the two funds separate, because one was money received from the State and the other comes through the State associations.

Mr. Dadant—Last year's report showed so much money left in the treasurer's hands; now the report shows separate items, necessitating the adding together of several accounts in

order to get the facts plainly. I would simply suggest that each year's account begin with the balance reported on hand at the close of the last annual report.

Mr. Becker—We do intend it to be that way.

It having been moved and seconded that the report of the auditing committee be received, the motion was put and carried.

Pres. Smith—Is there any miscellaneous business to come before the Association?

Mr. Black—Are there not some committees that should report at this meeting?

Mr. Stone—I suppose the Premium List Committee ought to report.

Pres. Smith—You are chairman of that committee, are you not, Mr. Stone?

Mr. Stone said he thought the members of the Association were familiar with what had been done last year. Some fault was found with what was done. The premium on beeswax was raised from \$10 to \$20. Mr. Cater, the superintendent of the department said they had \$50 that could be put into that list and no more, without getting the consent of the Board. Mr. Stone then hastily telephoned Mr. Becker. The meeting of the State Board was within two days. Mr. Cater agreed to have them raise the premium list \$10 on beeswax designs, and add a premium on Samples of Extracted Honey, and one on Case of Amber Comb Honey. The State Board always treats us kindly.

Mr. Becker—I think we had better let it alone for this year. It has been a bad year.

Mr. Black—The State Board wants a show, and they want the worth of their money. They think they are getting no more interesting show anywhere on the grounds for their money.

Mr. Dadant stated that he had been selected as judge of the apiary exhibit at the State Fair, and that one thing he would like to see would be the placing of that exhibit in a hall where there is a platform so placed that when the extracting of honey takes place it might be witnessed by a large number of spectators. As it has been, four or five people can get close enough to see, and they exclude from the same privilege everybody behind them. He strongly recommended the great convenience of

having the extracting done where there is a platform, and where people could see the work done. In which case there could be competition in the work of extraction.

Pres. Smith—I think that is a good suggestion.

Mr. Stone—I do not believe that anything has been done, or any other exhibit made, at the State Fair that has proved more attractive or interesting than this. Extracting honey on the ground is educational.

Mr. Dadant—I wish to say a few words more in regard to the education of people and the cultivation of a taste for extracted honey.

Mr. Dadant then told of the great difficulty that had been experienced in selling extracted honey in 1868-9, and how they finally succeeded in getting people interested in it by making an exhibition of it in Keokuk. They got business men interested and aroused such an interest that 300 or 400 buggies were to be seen at the place, bringing people from all around the country. And so the value of extracted honey was brought to their notice. And if people can just be induced to use it, they will prefer it to comb honey.

Mr. Black—I recollect being at Keokuk.

Mr. Becker—While we are on this subject I will say that I think the exhibit at the State Fair has done more to educate people than anything else. People do not know how we get the honey out of the comb. I believe if we had honey enough so that we could extract honey for a whole half day, it would be one of the best exhibits we could make, and would be found interesting to more people than you would at first think.

Mr. Becker went on to say that he sold honey in Springfield at a good many stores, and he never had to ask them how much they want. They ask, "How much can you let us have?" People who have used it before want it. He spoke also of candied honey; that it will sometimes spoil the sale of extracted honey.

Pres. Smith said that matter was discussed at San Antonio.

The advisability of using a label was mentioned and approved. The general opinion seemed to be that if the producer would place on the market a good article, plainly marked with his guaran-

tee as to its purity, it would find a ready sale, and the demand for it would grow.

Mr. Hinderer spoke in favor of the label recommended by the National.

(Something was said about what Dr. Bohrer of Lyons, Kan., said on that subject at San Antonio.) (See Report of National, included in this Report.)

The relative values of comb and extracted honey were advocated by various members. Mr. Black insisted that the human system needed something besides what is easily digested; and the comb was in no way objectionable. He also quoted eminent physicians as advising the use of milk and honey as better than medicines.

Mr. Pyle thought, while extracted honey should be used, and had advantages over the other, that the taste of comb honey was far superior.

Mr. Kildow thought the same—that take a section of honey and extract it and it was not the same thing, not nearly as good. He never could keep the same flavor outside the comb that it has in the comb.

Mr. Johnson said he thought all the five senses helped each other, and sympathized with each other. Take butter, for example: If it is not a good color it does not taste as well. The eye has the power to control the taste.

Mr. Black spoke of the keeping qualities of comb honey. He had found that some that had been standing for 4 years was as solid and perfect as when taken from the hive.

Mr. Becker mentioned one of his customers who used 60 to 75 pounds a year, who wanted both kinds.

Mr. Johnson said he sold some comb honey because some wanted it. If they would all take it he would rather sell all extracted honey, but we must produce what people want.

Pres. Smith—That is true, and bee-keepers must learn that fact to be successful. If consumers want a certain kind, produce that variety.

Mr. Stone thought customers will want just what we educate them to, and he was tired producing comb honey. He thought it impracticable to use the combs again for comb honey. His customers just ask for honey, but few ask for comb honey. Some object to the extracted honey, saying it might not be pure honey, could be more easily adulterated; but after explaining to them

how the honey is extracted they like it and do not care for the other again.

Mr. Kildow thought it made a difference where you live, near to or distant from a large market.

From the discussion of extracted honey the talk drifted to the subject of markets, and Mr. Dadant said the sale to private individuals was helping us today. They had been unable to sell through wholesale grocers. Grocers could handle the product that was labeled.

Mr. Black asked the proportion of comb to honey and Mr. Dadant answered that he could not say positively. From 25 to 40 per cent. The size of the cells has something to do with it. Drone-cells are larger in proportion. Mr. Dadant wished to say that this matter of eating comb depends largely upon taste.

The matter of advertising, whether the daily papers, the large Sunday editions or the bee-papers were the best medium. It was said that the bee-papers reached only men who were in the business and not customers for honey; but some of the members said they had found them to be good advertising mediums. Others had had success from advertising in the large daily newspapers.

At this stage in the discussion Mr. Holekamp was admitted to the hall and a short recess was taken to enable the members to meet and greet him. Then Pres. Smith, who had been speaking when Mr. Holekamp came in resumed his narration of how he secured the local trade, by sending honey to the grocer who would not buy it, but with whom he left it nevertheless, to be disposed of as he might find customers. Within 30 days he telephoned Mr. Smith to bring him more, and Mr. Smith has had no trouble since.

Mr. Holekamp said he thought the better market for extracted honey would have to be made. The demand for it must be created. One great trouble with extracted honey is that it granulates, and then when left in the dealer's hands is not marketable.

Mr. Black said you could not sell granulated honey.

Mr. Dadant said in regard to granulated honey, that there was a class of buyers who wanted honey in glass jars so it could be readily examined. He suggested putting the product up in at-

tractive style with the producer's label and guarantee that it is pure honey, and this helps the grocer to sell it.

Mr. Baxter—I endorse every word Mr. Dadant says. Up our way people know what granulated honey is. Most of our customers like it. I have no trouble with it.

The fact that honey from different kinds of blossoms will prove different in this respect, was brought out. Honey from alfalfa is found to granulate rapidly, while that from sage does not, and that from goldenrod is slow to granulate. And it was said that honey from sweet clover had not granulated, and the next year there was basswood mixed with it. Another gentleman thought basswood honey was likely to granulate. Spanish-needle was also mentioned, and it was said the late gathered honey granulates less rapidly than the early.

Pres. Smith said any miscellaneous business was in order. If any members had not yet registered it could be done now. Mr. Baxter paid his membership fee and received his badge.

Mr. Black brought up the question as to whether bees will eat fruit. Experiences were related and views exchanged, and the general opinion was that unless the skin has already been broken, bees will not seek for honey on grapes, peaches, etc., but are often found on over-ripe fruit, left on the trees after it should have been gathered, and which offers them food from bursting skins and soft or rotten spots, and places that have been pecked by birds.

Pres. Smith suggested that the Secretary distribute slips of paper on which members should write questions they would like to have answered. He said: "You need not sign your names to your questions, just write them and hand them in."

CONTRACTING FOUL BROOD.

The first question announced by the Secretary was: "Will bees contract foul brood from surplus honey produced on colonies that have foul brood?"

Mr. Dadant—I would like to hear from our President in regard to that matter.

Pres. Smith said it was probable they would. Such conditions would only occur in seasons when the honey-flow was very free.

Mr. Dadant—Is it not true that the bee coming from the field sometimes

gives its honey to some other bee to carry to the cell?

President—I do not believe the one stores the honey that gathers it.

Mr. Kildow—Do you believe it is possible for a colony that has foul brood ever to get rid of it?

Mr. Black—if my bees were where they could get honey from any source where there was a bit of foul brood I would not touch it.

Mr. Dadant said that a great deal had been learned about foul brood at the San Antonio meeting, and referred to the very interesting report of Dr. White. Specimens of foul brood were shown there and the bacillus described as in appearance like two tiny sticks held together by a more slender connection between them. The two little sticks end to end, united by the slighter joining. These bacilli develop rapidly, the slender joining breaking, and each end then becoming one by itself, and it developing and breaking in two, becoming two more, and this process is repeated every half hour. And they remain in honey for years, and when conditions are favorable, as soon as they find a proper medium, will begin to develop foul brood.

Mr. Kildow said he was very much interested in this matter of foul brood; that it was one of the things he came to this meeting to hear about. He has kept bees since 1880 and never had any experience with it until the past 3 years. He had bought some bees from a man who wanted to sell out, representing that his bees were all right, but when he got home Mr. Kildow found they had foul brood. He said Mr. Smith was up in 1905. Out of 40 or 50 colonies 31 were infected with the disease, and there it was right under their noses. It is almost useless for one man to clean it out of his own colonies when his neighbors allow it to increase in theirs.

Under these circumstances Mr. Kildow was very much interested in getting a foul brood law, and thinks we might get something like the law they have in Ohio. He would be in favor of making the bees pay what expense there might be attached to the enforcement of the law.

Mr. Johnson spoke at some length on the use of disinfectants, and gave some valuable information relative to experiments that had been tried. He had read a great deal on the subject,

and had some correspondence with the Department at Washington. He said, there were just two disinfectants—sulphur and formaldehyde—and told how the latter had been successfully used in disinfecting a house with the windows wide open; his theory being that to secure the best results the air should be freely admitted, the oxygen being necessary to the proper action of the

tion on this subject. I find that Prof. Newman, of Kings College, London, as well as Prof. Koch, the greatest German bacteriologist, agree that formaldehyde is not a disinfectant of itself, but that the gas-formaldehyde must be united with oxygen in order to disinfect. The Department at Washington claims that the gas is a disinfectant of itself by its affinity to things nitro-



SECRETARY JAS. A. STONE.

chemical. He advocated the McEvoy theory.

The question as to whether the bacilli were in the beeswax was brought up.

Mr. Dadant thought the only safe way was to melt up all the combs and use up all the honey.

Mr. Johnson thought we should not be satisfied with opinions of others, but leave nothing undone to learn more on this subject. He said: "The inspector of today should be an experimenter all the time. You perhaps all know that I have always condemned the formaldehyde treatment for disinfecting when used in an air-tight compartment. I want to give a little more informa-

genous. However, last summer there were 3 cases of smallpox in our vicinity in one family. The doctor disinfected that house in 5 days with formaldehyde with the windows and doors open a good share of the time, and the family ate and slept in the house during disinfecting. The children have gone to school all fall and people visited them and slept in the beds in which the patients were treated, no clothing nor bedding being burned. And no spread of the disease resulted. The disinfecting was complete; while about 10 miles north of us, where formaldehyde and sulphur were used in tight rooms for 24 hours, the disease spread in an alarm-

ing state. The cases in our neighborhood came from a visitor just out of quarantine where air-tight fumigation was used. So it seems that there is much to learn yet about formaldehyde as a disinfectant, especially among bee-keepers. And I want to add with great emphasis that formic acid, and not formaldehyde, is the real disinfectant; and if an air-tight tank be used in disinfecting combs there will be no formic acid produced, consequently no thorough disinfecting. Practice the McEvoy plan until we know more about gas treatment, but let our experimenters not give up formaldehyde, as that will be the 'plan' when better known and properly used."

Mr. Hinder said he had raised that question, and wanted to know if the practice of allowing bees from clean hives access to bees and the honey from hives infected with foul brood was dangerous.

Mr. Holekamp—I, too, am much interested in this discussion. We have suffered a great deal from this trouble. We formed a club for the purpose of assisting each other in dealing with it.

Mr. Holekamp also said that he had experimented with it, keeping a piece of foul brood a whole year in his office. He thought there was danger of its being carried, and said we could not expect to make much progress in getting rid of it as long as all did not work together to that end. He said any foul brood law should compel inspection. The greatest danger he saw was in the shipment of honey. Comb honey will leak. Boxes will be thrown out in the back yard, and bees will clean them up. There should be uniform laws in all the States, and we should not rest until we get bills passed which will compel inspection. Chemicals may be good enough, but we do not want to be using them continually. He had found that an easy way to destroy bees and the comb. He related some of his experiences with foul brood, and repeated that it was of little use for one bee-keeper to clean up his hives while others were careless of theirs.

Other members said their experience had been similar, and thought the infection was carried by bees and in the honey.

Mr. Dadant—Some think they can cure it by simply changing queens. Some do not believe in this shaking

business. Some want to scorch the hive. I advocate the use of the McEvoy treatment.

Mr. Baxter—Two years ago I had a colony I was sure had foul brood. I had never had it in my apiary, and I was thoroughly scared. I asked advice as to what to do. Upon that advice I changed queens and had no more trouble.

Mr. Johnson told of one instance where it seemed apparent that the foul brood was brought by the introduction of a new queen.

As it was getting late Pres. Smith suggested that it was time to adjourn.

Mr. Stone moved that the first thing to be done in the morning be to take up the consideration of a law for dealing with the foul-brood problem, which motion received a second and was carried.

The meeting then adjourned till 9 a. m. on Wednesday.

SECOND DAY—MORNING SESSION.

At 9:30 a. m. the convention met again.

Pres. Smith—The meeting will now come to order, and we will proceed with the order of business. Upon adjournment last evening it was decided that we should take up the question of foul-brood legislation this morning.

Mr. Dadant—It seems to me you, Mr. President, are the best informed man on this matter, having served the Association as Inspector, and we should have your ideas on the subject as to how best the desired laws for the extermination of foul brood may be secured.

Pres. Smith—I would like to hear from some of the members. I have been upon the Legislative Committee for the past four legislatures, and they have turned us down every time, so far as enacting any law for the control of foul brood is concerned. They claim they don't want to create another office. They are all politicians, and working for themselves, and it is hard to get their interest or assistance in passing such a law. They told me at the time we made our last effort in this direction that if we insisted on the foul brood law we would lose not only that, but any appropriation—would not get anything. If we would leave that out, we might get our Bill passed. Talking to a member of the Committee on Ap-

propriations he said, "Are you fellows going to insist on that Bill? Better let it go awhile or you will lose your appropriation." And I understand the Governor will be very close with appropriations this time. I would be glad to hear what members have to say

Mr. Stone—I want to say that I have been on that same committee every time, and I made it a business to be at the State House twice a week. I have seen members of the legislature who have influence, and think they will get this Bill through for us. It has been recommended that when we get a Bill passed that will go on the statute books it will have become a law and will not have to be passed each session, as the Appropriation Bill has to be. They object to our appointing the Inspector, but we need not make a point of that. Let the Governor have the appointing power. If he does not appoint a man who is qualified for the work it will make so much opposition and trouble that he will be obliged to select for the position some one capable of filling it. I believe that we will get a Bill through just as we ask for it, and suggest that we dictate it just as we want it.

Pres. Smith—I will say that the Senate has always been favorable; we will need some influence in getting it through the House.

Mr. Johnson—I would like to ask just what was the opposition to the Bill presented to the last legislature?

Mr. Stone—There was no opposition. It just failed to pass. In the same way other Bills were killed, it was among those that had not yet been passed when the close of the session was reached, and was simply shut out.

Mr. Johnson—According to this, then, there was no opposition.

Pres. Smith—Mr. Stone and I called on the Governor, who referred us to the Attorney General. The Governor expressed neither approval or disapproval, but said it should be passed upon by the Attorney General, that whatever he recommended as to its requirements would be right. I was advised to drop that Bill. Get the appropriation and let the balance go.

Mr. Kildow—We all have read what our committee have done, and I think they have done all they possibly could. It seems to me we might get at it in another way. Ask for no appropriation,

but ask for an Inspector and let the bees pay the expense.

Mr. Dadant—I have had some experience in these matters—have helped to get Bills through, and would like to suggest that while it is a good idea to tax the bees, I don't believe that it need be done. If you can get your Bills into the proper hands they will go through. There are certain of the members of the legislature who get things done. Put your Bills in the hands of the right men and they will go through.

Pres. Smith—You might write letters to members of the legislature every day and it would not amount to anything.

Mr. Baxter—I do not agree with you at all. I believe we can get what we ask, and should make our wants known to the members. You put it into the hands of Senators Berry and Dunlap, and such men as they are in the House. Another thing that we want is a law in regard to spraying, and we ought to have a similar law for the inspection of importations of queens into the State.

Mr. Johnson—It was mentioned yesterday, that we have this inspection of queens. And a spraying law ought to be had. Spraying trees in bloom should not be allowed.

Mr. Black—In the line of Mr. Baxter's remarks, there are wheels within wheels. The big thing, it seems to me, in this is to have our legislators understand the need of these things. It is well to be wise in the selection of the men who are to present the matter to the committee. We want to be sure to have this Bill pass through the hands of some one who will see that it doesn't conflict with other interests, and do not get it in such shape that it cannot be enforced. I think there should be a law prohibiting spraying in time of bloom. Though from experiences personally known to me, it has been proven that a limited amount of spraying in time of bloom may be beneficial, and result in producing better fruit.

Mr. Johnson—It has been said that writing letters will not do much good. In that regard I would refer to the Ladies' Home Journal which asked its readers to write letters to help create public sentiment.

Mr. Holekamp—I have had some experience in the work of getting Bills through, and will say that I had 3,000 bee-keepers write to members, and then

I saw every member of the Senate and nine-tenths of the members of the House, and in many instances they would say to me, "Oh yes, I have had letters from home." I would also suggest that your Bill be so drawn as to provide for the extermination also of black brood and other diseases. Those letters help, and call attention to the fact that there are such diseases.

Mr. Souer—Mr. Abbott said, in a letter in the Modern Farmer, that anybody who was capable of taking care of bees was capable of taking care of foul brood.

Mr. Stone quoted a member of the legislature as saying, "If you don't quit flooding me with letters I will see that your Bill don't go through;" but in such a manner that it was apparent the letters had done good work in securing his interest in the measure.

Mr. Dadant—I think as time is becoming limited it would be well for the President to appoint a committee to draft a bill to be presented to our legislature, and that the members of the Association be asked to write letters to members of the legislature in the interest of the same. I would suggest that the three things be included—appropriation, foul brood and spraying.

Mr. Dadant made a motion to that effect which was seconded.

Pres. Smith—Are you ready for the question?

Mr. Kildow—Is it left for this committee to do as they see fit, or will you instruct the committee as to their course of action?

Mr. Becker—I am not in favor of introducing three Bills. We are getting too many bills. It will be like it was two years ago. It was hard to get our Bill through for an appropriation of \$1,000, and too many Bills will defeat us in our efforts, and result in our getting nothing. I think we would better let the spraying matter alone, and get the Foul Brood Bill through.

Mr. Dadant—I would like to insist on giving the committee full scope. Let them use their judgment in drafting the Bill. Do not tell them to get up this or that kind of Bill. We want a Bill that will make sure destruction of foul brood. As to passing three Bills—let them do it if they can. I do not think that we should limit the committee. If the legislature does not pass all the Bills—if they will not enact at one session

all that we want, we will go after them next year.

Mr. Black—if they do not pass all, they might pass one.

Mr. Baxter—Leave the committee absolutely unfettered. I believe these Bills will not conflict with others. We are as much entitled to an appropriation as other State societies. I believe we can show the legislature the importance of bee-keeping in this State.

The question was called.

Pres. Smith—All in favor of Mr. Dadant's motion, that a committee be appointed to draft a Bill or Bills embodying the measures upon which we desire legislation, say "Aye:" contrary "No."

Pres. Smith—The motion is carried. I will appoint as such Committee: Mr. Dadant, Mr. Johnson and Mr. Stone.

Mr. Dadant—I think that the President should be a member of that committee, and I make a motion that he be made one.

The motion received a second.

Mr. Dadant then put the question, and the President was unanimously elected a member of the committee to draft the Bill.

There was some discussion as to how the work of the committee could be best accomplished, and the President suggested that the chairman, Mr. Dadant, could draft a bill and send it to the other members for their approval and suggestions.

Mr. Becker—I move that the legislative committee consist of the executive committee when elected—the President, Secretary and Treasurer. The Secretary, Mr. Stone, has had some experience in legislative matters and lives near Springfield, so that it will not be inconvenient for him to be in attendance frequently while the legislature is in session.

Mr. Pyles—I think the men who draft the bill would be the better men to present it. Their ideas might not be just the same. I have no personal preferences, but think the men who draft the Bill will make a better effort to have it passed.

Mr. Dadant—I am in favor of the suggestion.

There was some discussion of this question. It was proposed that both the executive and the newly appointed committee be made a committee on legislation; but it was thought that would

be too large. It would be hard to keep each member informed and advise with him as to how to proceed, and the President finally put the motion as made by Mr. Becker, that the executive committee be made the legislative committee, which was carried.

Mr. Baxter—Mr. President, do you think it wise that we ask assistance of the faculty of the State University at

proceed at once to the election of officers for the ensuing year.

The motion received a second and was carried.

Mr. Black—I move that the Secretary be instructed to cast the ballot for Mr. J. Q. Smith, for President for the ensuing year.

Pres. Smith—Gentlemen, I have filled this office for a number of years, and



TREASURER CHAS. BECKER.

Champaign, in securing this legislation, and of the executive committee of the State Horticultural Society?

Pres Smith—Yes, sir, I certainly do think we should have their co-operation.

Mr. Pyles—I move that the Secretary send to the members of the State Bee-Keepers' Association the names of the committees on appropriation in the Senate and in the House and ask them to write to their members, personal letters.

The motion received a second and was carried.

Mr. Pyles—Mr. President, I move that the rules be suspended, and that we

am quite willing to retire; and there are plenty more of you well qualified to take it.

Mr. Black put the question and upon a unanimous vote in the affirmative the Secretary cast the ballot for Mr. Smith as President.

Mr. Dadant—I move that the President be instructed to cast the ballot of the Association for Mr. Stone for Secretary for the ensuing year.

Having put the question, which was decided in the affirmative, the President cast the ballot for Mr. Stone as Secretary.

Mr. Dadant moved that the Secretary be instructed to cast the ballot for Mr.

Becker for Treasurer for the ensuing year, which motion was carried and the ballot was cast accordingly.

The newly-elected officers expressed their appreciation of the honor and the confidence of the members reposed in them, and accepted the duties of their respective offices cheerfully, promising their continued efforts to advance the interests of the business of bee-keeping.

Pres. Smith—The Secretary will distribute slips of paper on which the members will please write the names of those whom you wish to serve you as vice-presidents for the ensuing year. Five are to be elected, and you may each vote for 5 if you wish. All the votes will be counted and the 5 members receiving the highest number of votes will be declared elected.

The vote resulted as follows: 1st Vice-President, J. E. Johnson of Williamsfield; 2nd Vice-President, S. N. Black, of Clayton; 3rd Vice-President, E. J. Baxter, of Nauvoo; 4th Vice-President, A. L. Kildow, of Putman; 5th Vice-President, W. H. Hyde, of Canton.

Pres. Smith:—The appointment of foul brood Inspector is next on your list of business coming before you.

Mr. Stone—I move that our present Inspector, Mr. J. Q. Smith, who has served so acceptably, be appointed for the coming year.

The motion having received a second the question was put by Mr. Johnson, the newly elected 1st Vice-President, and unanimously decided in the affirmative.

Mr. Stone said that was as good a time as any to bring up the matter of the salary of the Secretary, and presented some facts in regard to the work required of that officer in carrying out the instructions of the Association.

Mr. Scroggin moved that the Secretary's salary be made \$75.00.

Mr. Dadant asked if any of the State fund was available for this purpose, or if it had to come from other sources. It was stated that it could not be paid out of the money received from the State. The subject of finances, and more particularly the amount now in the treasury, was inquired into.

Mr. Becker moved to amend the motion before the Association by making the Secretary's salary \$60 instead of \$75.

Mr. Scroggin accepted the amend-

ment and the question being put was carried, and the salary fixed at \$60.

A very sensible and interesting paper was read by Mr. Johnson on:

IN THE POOR YEARS PREPARE FOR THE GOOD YEARS THAT ARE SURE TO FOLLOW

As we come together to discuss things of interest to bee-keepers at this convention, we come not as bee-keepers having just reaped a bountiful harvest, but we come, at least most of us, having cause for discouragement, as in most parts of Illinois there is this year almost a honey-famine. As bee-keepers, we usually get enthusiastic when we are in the midst of a prosperous year, and when in the midst of a good honey-harvest, we at once begin to plan to increase the size of our apiary, and usually we increase our number of colonies only to find that when we are best ready for a big honey-flow we don't get it. Then the poor years will discourage us so that we neglect our bees, and thus lose many colonies, so that when a good honey-year comes we are not prepared to meet it to the best advantage.

You have perhaps noticed that unless we exert ourselves to follow our best judgment, we naturally fall into a habit of doing a good deal as others do. The man who merely follows the crowd will never succeed as well as he who does what, after careful consideration, he concludes to be the right thing to do, whether others do it or not.

Let us review our present situation. We have had an exceedingly poor honey year, and last year was not extra good. The blue-grass in the pastures is in many places killed out by dry weather, and, should we have a wet year, which we usually do after a dry one, the white clover will spring up unhindered; not only so, but many people have thinned out their stock so that it will not be pastured so closely as usual next year, and it is only when the white clover gets ahead of the cattle that it can yield its best. Not only so, but during a wet year there will be much more abundance of heartsease, Spanish-needle and other fall flowers; so, taking all things into consideration, I think we have a fair prospect for a moderately good year in 1907. So let us not forget that in the time of a poor honey-year is the time to keep up courage and

prepare for the good years that must certainly follow.

Let me cite another feature. I have quite a few neighbors that keep from 4 or 5 to 15 or 20 colonies of bees. Three years ago they would stop me in the road to talk bees, but now those who have any bees left don't give them a thought, because they don't bring in an income. I talked with a man the other day who had had from 20 to 25 colonies of bees until this year. He said he did not know whether they had enough honey to winter or not, as he had not looked through them since last spring, but he believed there were only 8 or 10 colonies left now, as several died in the summer.

Another man lost all of his bees last winter and spring, and so on. So we have that advantage. These men with their small apiaries won't be in the business when the next good year comes along, to glut the country store market with 10-cent honey in 2 or 3 year old section-boxes. None of us know what the future may bring forth, but one thing we do know, and that is, in the past the good seasons have always come after the poor ones, and it is reasonable to expect that history will repeat itself in this respect. And if we are faithful during our trials and hardships in bee-keeping, we may expect to reap the profits when the good times come.

The man who has a good-sized apiary, and has his bees in shape to meet the next good honey-year, is going to make some money at bee-keeping. So let us then carefully prepare our bees for winter, and look after them well in the spring, so that we may be prepared for whatever may come. Anything that is worth doing is worth doing well. Let us apply this rule to bee-keeping at all times, and if there be such a thing as success, we will be sure to make its acquaintance.

In most parts of Illinois, 50 to 60

colonies are enough in one apiary in average years. Let us be careful that the good years do not catch us with 15 or 20 colonies and the poor ones with 100. If we have 50 colonies in a very good year, they can be increased easily; and if we have 50 colonies in a fairly poor year, we will get more honey than if we had a hundred, as we will have many thousand less consumers of honey. We should each study our locality, and aim to keep the number of bees our locality will support well in an average season.

J. E. JOHNSON.

The foregoing paper was followed by a discussion which was participated in by Mr. Black, who said that bee-keepers were becoming fewer in number, year by year, but those engaged in the business were carrying it on more intelligently; and by Mr. Souer, who asked of the President the advisability of putting a cushion on colonies where two were united. This question brought out interesting remarks from Messrs. Baxter, Dadant and Holekamp, and, like other practical discussion of living questions, a valuable exchange of ideas resulted.

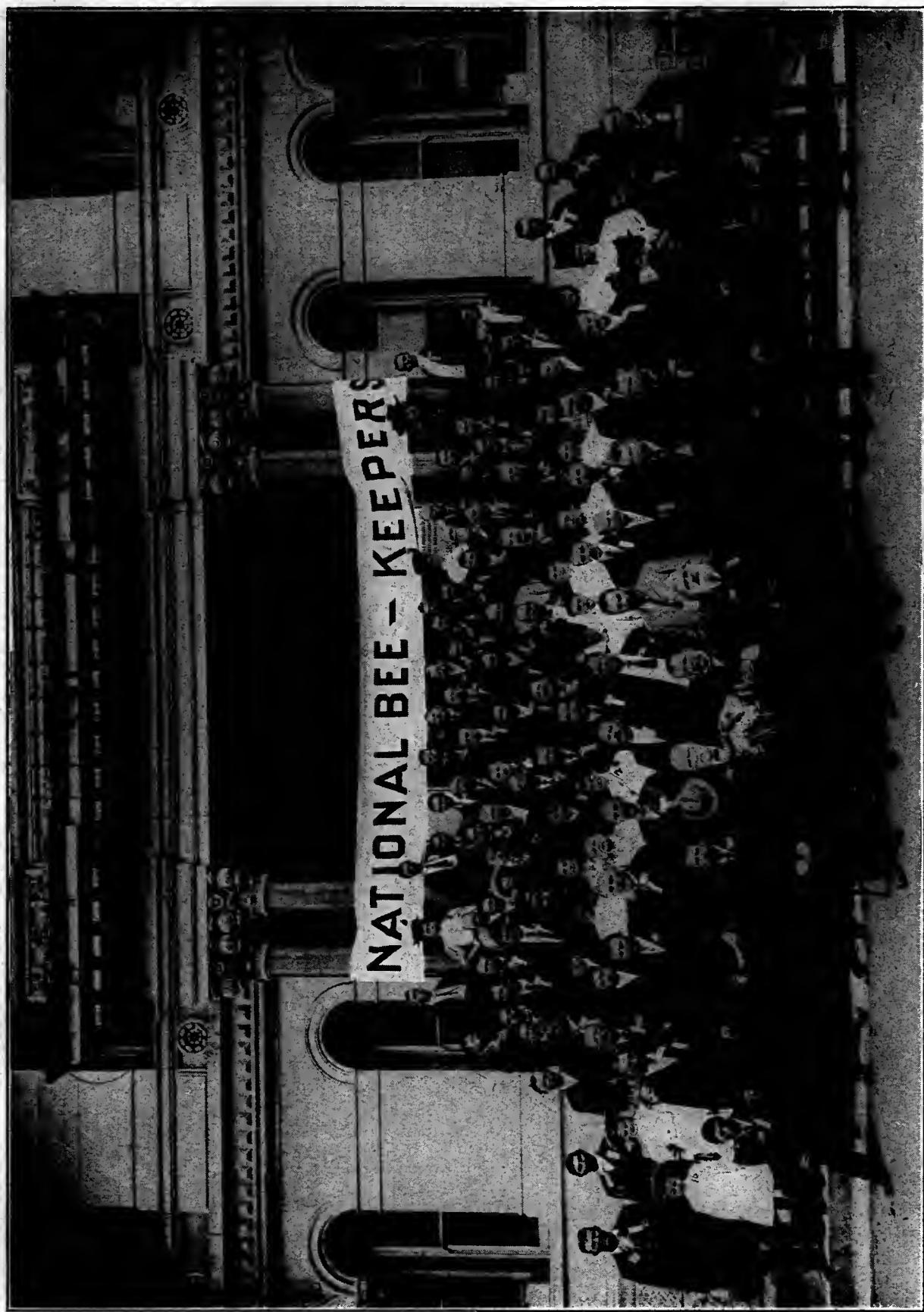
As it was nearing the noon hour when some of the members had to leave the city, Mr. Dadant and Mr. Black asked to be excused, and after a little more general discussion an adjournment was taken to 1:30 p. m.

At 1:30 o'clock the meeting was called to order with Vice-President Johnson in the chair.

Mr. Kildow moved that each affiliated bee-keepers' association in the State be allowed to send a delegate to the State convention and that their railroad fare be paid by the State Association. Carried.

After an hour or two spent in friendly discussions, the meeting ended its session in a *sine die* adjournment.

JAS. A. STONE, Sec.



A part of the National Convention at San Antonio, Texas, Nov. 8, 9 and 10, 1906.

PROCEEDINGS

—OF THE—

37th Annual Convention

—OF THE—

National Bee-Keepers' Association

HELD IN SAN ANTONIO, TEXAS,

Nov. 8, 9 and 10, 1906.



The opening session was held Thursday, November 8, 1906, at 8 o'clock, p.m., President C. P. Dadant, of Illinois, occupying the chair. Mr. W. Z. Hutchinson, the Secretary, being unable to attend the convention, Mr. George W. York of Illinois, was elected Acting Secretary of the Association.

Pres. Dadant called the meeting to order, then the following address of welcome was made by Pres. W. O. Victor, of the Texas Bee-Keepers' Association:

PRES. VICTOR'S ADDRESS

"Texas is the greatest bee-keepers' State in the Union. It is the greatest in a great many other things. Texas raises more cotton, more rice, more cattle, than any other State; has a fine flow of oil, and is rich in mineral deposits. It has as much to make the people prosperous as any State in the Union. San Antonio is known all over the State as the best residence city in the State. The banks of the City have more money in their vaults than any other Texas city. It is of great historical interest, and we will have more of it to show you before you leave. We welcome you to the best city in the best State in the United States, and invite you to become citizens of it."

A response was made by Pres. Dadant, saying the bee-keepers outside of the State of Texas were glad to meet in the South, as but once before in the 35 years' history of the Association had it met so far South, and that meet-

ing was held in New Orleans, La., in 1885.

As there was very little business to discuss the first night, the question-box was opened, but before that was done, at the request of N. E. France, Dr. Bohrer, of Kansas, one of the two charter members of the Association present, was called upon to deliver a short address, which was as follows:

DR. BOHRER'S ADDRESS

I am a good deal like a gentleman was, that one time went into church, and was somewhat intoxicated. He sat down and went to sleep. At the close of the services the minister desired all to stand up that wanted to go to Heaven. All stood up except this man. He woke up about this time and the minister asked all those that did not want to go to Heaven to stand up. The man didn't know exactly what the question was, but said, "Parson you and I are fearfully in the minority;" so I am fairly in the minority, and I do not know what was talked about.

I was a bee-keeper in the State of Indiana, and moved from there in 1873 to Kansas, which was not adapted at that time to bee-keeping. Many of the flowers were non-honey-producing plants. Now we have thousands of acres of alfalfa in Kansas. The weeds grow and the bees take possession of it, and gather a good deal of honey from it. Like Texas, Kansas is getting to be one of the best honey-producing States.

I am certainly glad to visit the State of Texas. It has been more than 40 years since I was here, and it is not so warm as it was then. I have had a warm reception, but not so warm as I had then. I happened to be a soldier, and was probably in the last engagement of the war, at Brownsville, Texas. There was one man killed. I was in the medical department of my regiment. Another soldier, a Texan, was dangerously wounded. Both were splendid men, and each had a wife and six children at home, and I never will forget the conversation I had with the wounded man. I went into the hospital and he said, "I suppose you are one of the doctors." Then he said, "Will I be neglected because I am a Confederate soldier?" I said, "Not a particle, you and I are not responsible," and that I was but one of those who had to settle the great question, and that we did not hold a personal grudge. Since then the North and the South have united. I never think of Texas but what I think of that unfortunate occurrence. There was a gulf between the two sections of the country at that time that seemed to be impossible to fill up and bridge over. Now, tonight I don't think there is a man here or elsewhere but what would be willing to concede that it is not only bridged over, but almost entirely obliterated.

The daughter of the Confederate soldier falls in love with the son of the Federal soldier, and they are mixing up and making the grandest people the world ever knew. No other country has ever reached that high degree of civilization that has built it up, but the end has not come yet; everything, like bee-keeping, is in its infancy. When bee-keeping was introduced in this country, it was my lot to buy the first queen that was ever purchased in the State of Indiana. The people did not know what that meant,—the idea of sending off and getting a select queen and introducing it to a black colony of bees; that it would change that colony to a colony of Italian bees! Why, the man that considered this idea was not considered of sound mind, and they laughed at me. I was a physician, and several families refused to employ me. But after I had succeeded they would come 15 and 20 miles to see my bees, and one man said, "the blamed fool has ~~act~~ally done it!" I paid \$10.00 for

that queen, and I paid \$20.00 for the second one. We have advanced in the matter of queen breeding so the finest queens can be bred for \$5.00.

I want to say to you that I am not engaged in the business of bee-keeping with the hopes of making a single dollar, but I do hope and expect to benefit somebody, and engaged in that pursuit for pastime. I have only about 30 colonies but they keep me busy.

I want to say that a great many Italian bees in this country are not so good as the bees from Mr. Langstroth. We are too careless as to how we handle them. We take great pride in advising with a man who wants to do the best he can. If you can breed two superior and distinct breeds, don't breed them less than 20 miles apart. There is something in the Carniolan blood that makes them a little crosser than I want bees to be. I have gotten from one of the best queen-breeders in the United States, and from a gentleman of the South, too, a Carniolan queen. I went on for some length of time, thinking it was due to some imperfection of the queen; the brood would begin to die, and keep on from the time they began to hatch; many of the queens did not fly. I simply pounded the life out of that queen and gave them brood from another queen that I got from a Tennessee queen breeder. I say to you, gentlemen, that there is great danger of this thing happening in this country, and in my opinion this has gone on long enough. If the queens are worthy of being introduced, let them be tested, and don't you breed them less than 12 to 15 miles apart."

QUESTION-BOX.

"Will a list of bee-keepers' names be printed for distribution, as at Chicago?"

Pres. Dadant—I make this explanation, that it costs us a little each year to make this distribution; our daily papers are only too glad to report who were at this convention.

Mr. France—Last year there was a motion that but two answer a question briefly and decidedly. I don't think that is the intent this year, but to make the question-box the most important of the whole meeting.

Mr. York—That was done near the close of the last session, and because

our program was long. We lacked time.

1906 HONEY CROP IN TEXAS.

"How many carloads of honey did Texas produce this season?"

Pres. Dadant—That is a question for our Texas bee-keepers to answer. I would like to hear from them.

Mr. Victor—Texas did not have a heavy crop this year. I think it was all shipped locally, and it would be hard to say exactly. Some seasons we ship a good many carloads, but I did not try to make an estimate this year. Possibly Mr. Toepperwein could give us the information.

Mr. Toepperwein—Mr. Atwater is up on this. He can tell us.

Mr. Atwater—I can hardly answer the question, because the season is not quite over yet. I think at the close of the season we will make a very good report.

FEEDING QUEEN-LARVAE.

"How long do bees feed the larva before the queen-cell is sealed? Does the age of the larva have anything to do with it?"

H. Piper—I would like to say that in Texas it takes only 4 days. Then again, the age of the larva has something to do with it. If I use a larva over 4 days, it does not take so long.

Mr. Dadant—Mr. Root, let us hear from you on this subject.

H. H. Root—These queen-breeders can answer this question better than I.

Mr. Victor—I don't like to talk on every subject. I think, though, in a matter of this kind, it would be as the first gentleman said. It is from the time the larva hatches, or until it is sealed as a queen. I would say from the time it hatches from the egg into the larva would be between $5\frac{1}{2}$ and 6 days, and usually about $4\frac{1}{2}$ days after it is transferred from the queen-cell before it is sealed over.

J. E. Chambers—I wish to say that my experience is limited. I find that a larva is used from 12 to 14 hours.

PROGRESS IN GETTING BETTER-NATURED BEES.

"Has there been any real progress in getting better-natured bees within the last ten years?"

Mr. France—I think there has been progress in the bee-keeper being better-

natured in handling the bee.

Mr. Hilton—There is no question in my mind but there has been progress. The bee-keepers do not retrograde, and they either advance or else they do retrograde as do all institutions, and from that standpoint I say there has been progress. I know that I got good results by introducing new blood into the apiary annually. It is one of the best investments a man can make, consequently I answer in the affirmative, that there has been progress made in the bettering of the nature of our queens and bees in the last ten years, in accordance with the question asked.

Mr. Aten—I do not believe they have. I believe the gentleman was just talking about the people, that some people get better blood amongst their black bees, but I cannot see that the new blood they are introducing is as good as the bees we had ten years ago.

Mr. Hilton—I certainly take exceptions to the gentleman's stand, and I say that we do get more gentle bees by introducing new strains of gentle blood, and I am sure I can bring to bear the experience of other men that have introduced a more gentle strain. I am glad the gentleman called me out, I like discussions, and it is good for us; it is good for us to dwell together in harmony while there is harmony in good, honest discussion, and there is information, and there are those of us who have come 2,000 miles that don't care to go home with empty minds, but we may go home with empty pockets. I want to say that I have been taught something while here.

Mr. Adkins—I believe that the introduction of new blood has made our bees better-natured. I was not a bee-keeper 20 years ago, but I heard my neighbors talk about bees, and they said my bees were gentle compared to those that they had then.

Mr. Aten—I differ from those gentlemen in this way: I say that I had just as gentle bees ten years ago as I have today; I say there were just as gentle bees in the United States as I have today, and I will stick to that.

Mr. Coggshall—Mr. President, my experience has been that my bees have been crosser by every blood that I have introduced. I have had bees from different queen-breeders, and I take it no better blood.

Mr. Parsons—I can see, as I under-

stand, applying to the last ten years, that there has been an improvement in the bee's gentleness. My experience is that it is an unknown quantity when you introduce a new race, or a new blood, as to whether that will be an improvement in the crossing of blood; but there has doubtless been great improvement, and there are constant improvements in the rearing of queens and cutting out of ill bees. And there is where the great improvement is made, cutting out the ill bees instead of trying to get a new cross by introducing new blood; and where I find a queen on a colony of bees that is ill I do away with that queen; and a cross of one race with another, so far as I have observed, almost invariably makes an ill-natured bee, and is hard to handle.

Dr. Bohrer—I will say that 42 years ago, in 1864, I got my first Italian queens, and I used to handle those bees without any protection whatever on my face and hands; but in 1901, when I again fell into line with the bee-keepers, I did not find it that way. The bees were cross, and stung me on every side if possible, but not always. Those bees that I speak of 42 years ago, once in awhile they would sting me, but on other days they would not; but I never undertake such a thing now as to handle them without my face and hands well protected, and sometimes they do not sting me at all while other times may be 100 will sting me, but whether it is due to the climatic influence or the nature of the bee I am unable to say. These good bees were rare in Indiana, but I do know that they are crosser as a rule. I have got rid of some of those cross bees by introducing a new strain, but taking it all in all I doubt whether I have succeeded. I say, push it to its fullest extent, so that nobody will be deceived, and if they prove as good as I think they will, as good honey-producers and not so good-natured, it would be wise to adopt them, but it would be premature to conclude that they were an improvement upon another bee in disposition; they may be, but will they prove to be a profit? I don't think we are prepared to answer this question.

Mr. Kemper—I think I made an advancement so far as gentleness is understood. Is it to introduce a bee that will not sting, or one better-natured? I don't believe that I have made an

advancement as to introducing a gentle strain of bees.

Mr. Smith—Now the question is, Has any progress been made in improving the gentleness of the bees by breeding for that result? I want to ask the queen-rearers, How many of you have bred queens for that single purpose? I, as a rule, have found that most queen-rearers have been breeding queens for color, and long tongue and honey-gathering. Now, conditions depend a great deal upon the gentleness of the bees. Take a year like this, in Illinois you never saw bees crosser than they are this year. I visited probably 1,000 apiaries over the State and I want to say there were very few places I was not secure as to hands and face and sometimes it was almost impossible to control them with dense smoke. I think it depends a good deal upon conditions. That has been my experience.

Mr. Reed—So far as the queen-breeders of Texas are concerned, I am bound to take the negative side of this question, so far as those I have patronized. I don't believe that the breeders of Texas are breeding as gentle a race as they did a few years ago. I attribute it to the Cyprian blood they are introducing.

E. J. Atchley—I think that question can be answered in one word. There has been progress made, and it seems to me that queen-breeders ought to answer this. If they think it is the part of the honey-producers to answer this, from my own part I think there have been improvements within the last ten years in the rearing of queen-bees.

Mr. Jouno—I think it is due to having better facilities for handling bees, and a better understanding of them. As to ten years ago, it seems to me they are more gentle.

Mr. Chambers—I wish to say that for my own work within the past 6 years I have used improved Carniolan queens, and they produce strong honey-gatherers. There has not been a year that I have not introduced new stock, and I find them to be more gentle than when I allow them to run on for several years.

O. P. Hyde—I have had some experience in the queen-breeding business for several years, and I have had several races. I had a yard with 5-banded and 3-banded, the Carniolan, Italian and Holyland, and my experience has been that where I stuck to the Italian bees

I have improved the gentleness considerably over the black bees; but where I find a breeder that recommends the Cyprian and gets them mixed up with other bees, they are a very cross bee. I know this by experience. I went to a Cyprian colony and I know by experience they will sting. If we will stick to the Italian bees, I claim that the gentleness is considerably better than it was ten years ago.

Mr. Victor—In answer to Mr. J. Q. Smith, as queen-breeders, I would like to say that the first thing I consider is selecting a queen-mother with the honey-gathering qualities first; looks next, and gentleness for the third place; and I will say that I used to breed three different strains of Italians, that I called improved Italians; then home bred Italians, and then the goldens. I decided the goldens had nothing but looks, and I quit them, and since then I have bred the 3-banded Italians, and I think I have better results in queens and honey-gatherers also.

NEW BLOOD OR NEW STRAIN.

"I hear our queen-breeders talk about new blood in bees. Do they mean new strains?"

Pres. Dadant—I think that can be answered by yes.

NEW BLOOD ANNUALLY.

"Is it necessary to introduce new blood annually?"

Mr. Hatch—I would like to speak a little on that point; it seems to me the honey-bee should be just as capable of improvement as any other stock, but as I know invariably we cannot always control them like other stock, so it takes a long time. Now in the matter of gentleness, I have handled them some, and I have proven that entirely to my own satisfaction, and I don't believe that anyone can contradict it, that too close breeding would give bad results, and I believe the same thing would hold in bees; and I believe, as I said, these things may be done on account of the bees mating in the air, not under the bee-keepers' control. I don't know whether I ought to say that it takes a good while to improve them, but I will say that I have better bees than I had several years ago.

Mr. Hilton—Now, is it necessary to introduce at all? But I believe I get

the best results by introducing a new strain annually. The gentleman last upon the floor has made the matter very plain, that it is best not to keep bees to close breeding. Then, if it be true, is it absolutely necessary that we introduce new strains annually?

Mr. Anderson—I am here for what information I can glean. I think this is a matter of importance, and I am not satisfied. Now, the question arises, if you have a strain of good bees, is it necessary to introduce new blood to that strain of bees? Now, there is the point I would like information on; I would like to hear from queen-breeders. Some say if you have got one stock of good bees, keep it pure, neither breed nor introduce another blood. Is it best to keep the strain of blood as you have it, if it is good, or is it better to cross it?

Mr. Victor—I think it necessary to introduce new blood in an apiary annually; it is necessary in a wild state. Bees in their wild state seldom swarm. I say that it is necessary to introduce new blood, even if it is from the same stock.

Mr. Chambers—According to my experience it is necessary to introduce new blood. You will always increase vitality by doing so.

E. J. Atchley—These questions come up at all our bee-meetings, and I think they should be argued very carefully as they come up. I think much depends upon whether it is necessary. If we are producing honey alone, and not breeding queens, I would introduce new blood only when I find my bees getting down. In some apiaries it is necessary to introduce new blood every year, and in others it is not necessary; it is owing to the locality; it is owing to the kind of honey that is produced, whether extracted, or comb honey, and different things that come up in different apiaries; but it is quite necessary for any bee-keeper who is expecting to make a living to look to his queens and bees. When they begin to go down it is time to introduce a good strain of blood, but as long as they are up to the standard it is not necessary.

J. Q. Smith—Mr. President, the gentleman that has just spoken has voiced my sentiments. I don't think it is necessary to introduce new blood every year, you might do worse; but if you

find that your queens have been superceded with inferior queens, then introduce new blood.

Dr. Bohrer—The introduction of new blood is that at some time or place degeneration will begin. Now, the question is, when does it begin? I believe that it begins first; that is, in breeding and requeening. I would suggest that good strains of bees be produced from good breeders, and by this means you will have good queens all the time. I sometimes get queens from Texas and other places, but keep them coming in from different directions. I have some queens that I want to get rid of, and I don't want the queen that stands a chance of producing a bad strain of bees.

Mr. Parsons—Those men who have just spoken have given me some idea as to the introduction of these queens, but I think that the person, who asked this question, asked it in the interest of the honey-producer, not from a honey standpoint. If your bees are not doing as well as you want them to; if they don't gather the honey that you think they ought to gather; if they are not as gentle; then I would say that it would be well to introduce new blood, but be sure that it is better than the one you have. It is a very easy matter to get something that is not so good as the ordinary; it will not do to depend upon getting a queen from an experienced and honest queen-breeder and breed from her and requeen your apiary. He may do all he can, but he has not had the time to test that queen to see if she is a good all-around queen; she may look all right, but she may be lacking in that point; so be sure that the queen you get is better than that which you have, else you may make your bees inferior.

Mr. Bergstrom—I think the question has been misunderstood. The question was this, Is it necessary to introduce new blood annually—*every year*? I don't think that there is anything exceeds the importance of introducing new blood occasionally, or only when it is needed.

On motion, the meeting adjourned to meet at 9 o'clock the next morning.

SECOND DAY—FIRST SESSION.

The Meeting was called to order at 9:30 a. m. Nov. 9, 1906, by Pres. C. P. Dadant.

Mr. Hilton—I move that the chair be authorized to appoint Committees.

Mr. Hatch—I second the motion.

The motion was unanimously carried, and a recess was given after which the following Committees were appointed:

ON EXHIBITS.

Louis H. Scholl, New Braunfels, Texas.
D. H. Coggshall, West Groton, N. Y.
A. G. Anderson, Ferron, Utah.

ON RESOLUTIONS.

R. A. Holekamp, St. Louis, Mo.
J. A. Stone, Springfield, Ill.
C. C. Parsons, Bluff Springs, Ill.

ON AMENDMENTS.

J. Q. Smith, Lincoln, Ill.
W. O. Victor, Hondo, Texas.
W. H. Putnam, River Falls, Wis.

ON QUESTION BOX.

C. A. Hatch, Richmond Center, Wis.
Geo. E. Hilton, Fremont, Mich.
Fred W. Muth, Cincinnati, Ohio.

Pres. Dadant—The next subject was a paper by Mr. Townsend, of Michigan, on "The Production of Extracted Honey," and the Secretary being sick has upset the disposition of papers; and as the paper may be in the mail this morning, we will therefore take up the question-box at once, unless someone has something else to propose.

CLARIFYING BEESWAX.

"How can beeswax be clarified?"

Dr. Bohrer—In order to determine what is used to get the wax clear, the best method of refining wax that I know of is that one used in the United States Depository. Go to your druggist and look up the refinement of beeswax; it is given in detail; the directions are there. I used to do it but I will not undertake to give it today.

Mr. Rouse—I think the easiest way to solve this question is for every bee-keeper to use a solar wax-extractor, and put the wax up in the best possible shape for the market.

Dr. Bohrer—Will it make it white?

Mr. Rouse—Yes, sir.

Mr. Kimmey—I simply wish to inquire the manner in which Mr. Rouse uses his extractor. I purchased one, but it does not work satisfactorily.

Mr. Rouse—Well, I cannot say that

I have had a great deal of experience with it, but what experience I have had I will give. It is built on the Doolittle plan. I use it with a double glass as a reflector to put combs on, and I believe that the double glass over the top will produce more heat from the sun, and I have no trouble to get it hot enough, and I am sure it will make it hot enough; so you had better handle it with tongs, and it will make the wax white. When it is first rendered out it is a little yellow, but put it in the sun and it will soon be white.

Mr. Kimmey—This is what I have been trying to get at. I find after the wax is put in the extractor it does not melt; new combs are all right. At the bottom I find a lot of black specks and sediment. I want to find out if anyone had the experience of rendering it and getting it into a clarified or refined state—whether you can do it with the solar wax-extractor. I find more or less impurities at the bottom. I have been obliged to cut the bottom off of the cake. I am not giving information, I am asking for information. I would like to have the experience of others.

Mr. Parsons—I wish to give my experience. After the wax has been rendered and run through the extractor once, then fill the pan about half full of water, put the wax back into the extractor, run it through again, and you will not be troubled with that sediment in the bottom.

Mr. Hatch—What kind of an extractor were you speaking of?

Mr. Parsons—A solar extractor. There are a great many extractors. I get hold of a good deal of wax that has been almost spoiled in the rendering, and I find that I can get more of the impurities out by putting it in a large body of water and bringing it to the boiling point, and let it cool as slowly as possible.

Mr. Kimmey—Do you soak it?

Mr. Parsons—No, sir, by holding it in the clear water, then take it out and boil it the second time in clear water; but I find that it is necessary in the use of the solar extractor to use some water in the pan.

Mr. Hatch—I would like to say a word on this. The first speaker suggested that boiling it in water would help to remove the impurities from the wax; but this will not do up in Wis-

consin, at all; there was certain material that would run through the wax. My experience has been, the sooner the wax is taken off the fire after it is melted, the better. I never found any impurities I could not remove by the solar wax-extractor. One-fourth of an inch of water in the pan is sufficient, and I clean out the comb, but leave a little of that there; it will sift out a lot of dust and finer particles. This is a great help, and I say I have seen no wax but what the solar extractor would purify.

Mr. Stone—I have found that the best thing I can do is to place the wax in a deep vessel, and keep it hot as long as I can, or let it cool slowly, and more impurities will come out than in any other way; and the deeper the vessel the more dirt will settle to the bottom, and the more the wax is cleaned.

Mr. Coggshall—As I understand it now, the bee-keepers in our part of the country use oil of vitriol, of a certain per cent, but I don't know what per cent they use; that cleans the wax when it is heated up.

Pres. Dadant—I enter a protest against the use of oil of vitriol. It will not take out the impurities.

Dr. Bohrer—I wish to join the President in advising against the use of sulphuric acids or oil of vitriol, for the reason that it will burn the comb out and take the substance out of it to such an extent that the bees will not work upon it.

Mr. Coggshall—I have had no experience with it, but I understand they use it in small quantities.

Mr. Parsons—Let us hear from the President on this subject.

Pres. Dadant—I only wish to say a few words. I think the great point is the use of plenty of water. One of the gentlemen made the remark that his wax was spoiled by the water. He used hard water; take hard water in an iron kettle and your wax will be black. Use cistern water, and you will have much better results. Don't over-boil wax, let it cool slowly, and in that way you get good beeswax, and by having plenty of water the sediments will go to the bottom; but don't try the plan stated, of using oil of vitriol.

Mr. Bergstrom—I would like to ask a question in regard to melting the beeswax. Have you had any experience

with the new extractor, and have you used it?

Pres. Dadant—No, I wish to say that in regard to the wax extractor, the one that I thought gave the best results was the one exhibited by Mr. Hershiser, of New York; but the German wax-press sold by the manufacturers is very good. Have your beeswax very hot, and press slowly; leave it on the fire, and keep pressing. I believe Mr. Hershiser's machine, if manufactured, would be very satisfactory.

Mr. Ripps—I had experience with the wax while using rainwater, and used apple vinegar instead of sulphuric acids. I used that, and it does pretty well.

Mr. Rouse—Is there enough in it, in clarifying the wax, to pay all bee-keepers to do that? The manufacturer of the comb foundation will always have it nice and clear, and I believe he can do it cheap enough; and in the remarks I made awhile ago I mentioned it in that direction, so I believe the solar wax-extractor will clean the wax out enough. That is what I had reference to. I don't believe it will pay individuals to go to so much trouble to get a purifier.

Mr. Johnson—I am one that is not entirely interested in bee-culture, in making money, but I have had some experience these 40 years, and I have found, in regard to the solar extractor—I use my cappings. I take the comb and boil it, and run it through some old gunny-sacks; then I have another vessel full of hot water, say a 6-gallon can, and put the wax into this, and I find when it is cool that I have nice, yellow wax. It gives satisfaction to those that I have sold it to.

BEST SMOKER-FUEL.

“What is the best material for smoke to subdue bees?”

G. H. Adkins—I find that the best material for the smoker is the stems from a cigar factory.

Dr. Bohrer—The kind of bees has something to do with the case. With the Cyprians I would suggest sulphur in a mild form.

Mr. Werner—I use dry elm wood, hickory wood, or willow.

Mr. Parsons—I use titi, and find that very good.

Mr. Victor—in regard to the smoker-fuel I use, the most convenient thing is something that is always handy, that

is, chips from the woodpile, and the Corneil smoker is what I prefer. With a few dry shavings, an old gunny-sack, and chips from the woodpile, it is good. It does not matter what kind of wood you use, but chips are as good as I have ever used.

Mr. Stone—I would like to ask Dr. Bohrer, as he suggested sulphur, if he would put it in his smoker. I want to say that some parties were repairing a church in our neighborhood; they found a swarm of bees in the roof, and they came to me to borrow my smoker to smoke the bees out. When they returned the smoker I could smell sulphur, and it did not last 3 months until it was worthless, and I could not use it; it was covered with little holes.

E. J. Atchley—The best material I use is dry moss, which is always at hand; it is in great abundance around our apiaries, and I have found it to work all right.

Pres. Dadant—You will have to ship it to us, because we don't have it up North.

Mr. Holekamp—It would not be necessary to ship moss from Texas. Old rags are plentiful, and the leaves in the fall are as good as moss; they are everywhere, and you don't have to go South for them.

Mr. Hilton—The smoker-fuel depends usually upon the locality. In some localities I can secure one thing, and in another I cannot secure it. In Michigan the best thing I find is rotten elm, that we find in the inner part of the elm tree, and I cut it up into chunks about 4 inches long, and then put in something that the bees don't object to, and that will not injure them in any way. Some of these things that have been talked about would be very objectionable, and I would have something to say to that, as well as the bees.

W. H. Laws—I wish to enter a protest against cigar-smoke; those that live with it under their noses think it is a good thing. I think what we need is something to frighten the bees—something that is not offensive, and will not anger them. We should give them a little kind that will frighten but subdue them; that is all right; but this obnoxious smoke is injurious.

Mr. Jouno—I gather rotten wood, post-oak, live-oak, hickory; then I hammer this up and put into the smoker. I find this is a good smoke. I have tried

tobacco and I find it does not do at all. I find that you will have to have something pleasant for the bees and pleasant to the breeder. I have tried chips and corn-cobs. As to sulphur, just give them a good charge of sulphur. I don't know about it rotting out the smoker, but it would certainly ruin the bees.

Mr. Hyde—I don't believe our bee-keepers know what is best. These Northern bee-keepers don't know anything about mesquite; they have none, but the best thing in the world to subdue bees is the smoke from rotten mesquite. We can pick it up anywhere; and you can break it up with the hands. Let it be rotten enough to break with the hands, and I think it is the best fuel. I have heard sawdust recommended; we don't have much of that down here. As one gentleman said, different localities have something to do with what we use, but here in our country we don't find anything equal to rotten mesquite.

D. C. Milam—I have heard it said that the thing that is most convenient is the thing to use. I find the best smoker-fuel is cedar-bark; it is handy, and you carry it around with you; it makes a mild smoke; but there is one objection, it creates considerable creosote; but cedar bark is best I think.

FREIGHT-RATES ON HONEY.

"Freight rates on comb-honey are too high. Is there any help from the National Bee-Keepers' Association?"

Pres. Dadant—We ought to hear first from the one who put the question. Let us hear from him.

Mr. Muth—I put that question. The classification of comb honey is not even considered by the freight officials on the railroads north of the Ohio River, which could be easily remedied if it would be taken up by the National Bee-Keepers' Association with the proper officials. For instance, the Western classification of freight on comb honey, (this applies west of the Mississippi River), reports a $1\frac{1}{2}$ c rate. West of the Mississippi Valley it is a $1\frac{1}{2}$ c rate. A $1\frac{1}{2}$ c rate means 90 cents or \$1.00 through Wisconsin down to Central Indiana, where it ought to be about fourth-class rate. It is classified $1\frac{1}{2}$, first-class, $1\frac{1}{2}$ rate. We don't take care of the honey in shipping it; you can see it coming in boxes. The railroads don't even know what it is. Mr. France ought

to be the man to answer this question better than I.

Mr. Holekamp—Would not the classification on extracted honey be fourth-class, when we get honey from East of the Mississippi River? North of that country is not in the Western classification, but the classification there is second-class. Now, I would think that it is worth while for this Association to take this up and have it uniform. While I can ship extracted honey from parts west of the Mississippi River at 26 cents, the same distance east of the Mississippi costs 56 cents. I have been taking this up with the freight agents at St. Louis, but they tell me this is to be taken up with the others.

Mr. Bacon—The railroads of the United States are divided into three classifications. West of the Mississippi River it is the Western Classification; east and north of the Ohio it is the Eastern Classification; and south and east it is the Southern Classification. Now, we are getting a cheap rate west of the Mississippi River; we are getting a cheap rate from the East, but we found that it cost over \$1.00 to ship into Alabama and Mississippi, where the rate to Havana, Cuba, was 59 cents from Watertown, Wis. It does no good to write letters to the railroad officials; we should send a representative to the different railroads which compose these Classification Committees; it is easy to turn a man down who writes letters, but it is harder to turn a man down who walks into your office in person. If you will send your representative to St. Louis, when the Southern Classification Committee meets, and also advise them in advance, they will hear you. Railroad men know very little about honey, and I believe if the matter can be properly placed before the Classification Committees, a remedy will be granted.

Pres. Dadant—Can any of you suggest some other plan?

Mr. Boyden—I would not be able to tell you a better plan. I think the plan of Mr. Bacon is the only plan to go by. I know it does not do much good to write letters.

Pres. Dadant—Mr. Putnam is a great shipper, let us hear from him?

Mr. Putnam—I have had experience with railroads on getting rates for supplies. I had our samples of goods at St. Louis, and I set the case before the

Western Classification Committee in Chicago; and I accomplished some good at that time, but I have noticed that there are other parts in the United States that are not heard by the Committee, and the rates are very much out of proportion. I think it would be well for the National to take this matter in hand.

Mr. France—If I remember rightly this Association passed resolutions to appoint a committee to go before the Classification Committee and lay this matter before them; but they only partially accomplished what they sought for. The freight-rate on extracted honey at that time had very little distinction as to the package, making the rate very high, no matter what the package was. We secured a rate which would include 65 cents, but on comb honey there had been so many damage claims put in against the railroads for breakage that they would not listen to a change. I do hope that some steps will be taken to take this matter up with the different companies of the Freight Classification. I went to Chicago and asked them to change the rate from 2d to 4th-class. They seemed to hesitate, but when I presented the can, "Why, sure thing," they said; "that is entirely in wood." I did not want to change it, because the old square-top left it open so anyone could take out the honey, and then a claim was put in against us for the loss of honey. They gave me a copy of what would be instructions to the agents of the Western Classification Committee, so that honey was changed to 4th-class entirely encased in wood. I was afterwards informed that there have been many damage claims where honey was shipped in cases of two 5-gallon cans, and they changed the freight classification in Kentucky and Tennessee, and I was told also in Texas; that the boxes must be metal-bound, to keep the wood from pulling off.

Mr. Laws—This information came to us, and the cases are metal-bound.

J. F. Teel—We get the metal-bound, but they are not all metal-bound.

Mr. France—But I believe at present the freight is higher on comb honey than it ought to be. I think it would be well that this matter be in the form of a committee, and if that committee will go to work, and accomplish some-

thing, and let me know, as soon as any change is made, you will know it.

Mr. Rouse—I would like to know if there is any difference in classifying extracted honey, or should it be called "strained" honey? I have the idea that being called "extracted honey" makes it higher.

Mr. France—It does not. Some years ago I shipped a case to New York City, and in order to secure a 4th-class rate I had to bill it "syrup."

Dr. Bohrer—Are you not of the opinion that there is a body, if you make an appeal to, they will assist you?

Mr. France—Yes, sir; it would have been done long before now if some other little questions had not come up.

Mr. Kimmey—It seems to me that this is a matter which is not right; it is a wrong we have suffered because it has not been attended to. It seems to me that the General Manager is the man that ought to do it. A committee ought to be appointed to assist him, but we should furnish the General Manager with all the information we can give him. We ought to pass a resolution to act, and then we ought to make a resolution in some way to empower the General Manager. I move that this matter be referred to the Committee on Resolutions for action.

The motion was duly seconded and carried.

Dr. Bohrer—This same object I presented to the Convention in St. Louis, and it was adopted, and the aim of this resolution was the object of what we are taking a vote on now. It provided for a Legislative Committee to be appointed from each of the States, and they in turn to act through the Manager of this body, and ask for a change that might be necessary as to the transportation companies. It is said now, and it is a fact, I have no doubt of it at all, and we, as an organization, ought to look out for the matter at least, and in time. If we apply through the proper officials I believe we could get it. It is an easy thing to appoint a committee, but it is quite a different thing to get them to act.

Pres. Dadant—I believe the greatest trouble is, too many people are appointed on committees. If you have one man from each State you will probably hear from three or four states, and then the matter will drop. Get two or three

men together and there will be more action. Now I want to hear other remarks.

Mr. Victor—It may not be in order, but I think there are other questions in regard to transportation that ought to come up before we settle this. For instance, I understand there is a question in regard to rates on bees, and on comb and extracted honey, and the rate on bees ought to be considered generally.

Pres. Dadant—This is a matter of importance. The Secretary will read another question on the matter of rates on bees, and we can include this before we dismiss the matter.

FREIGHT RATES ON BEES.

"Freight rates on bees from Texas and other states are so very high. Is there any help from the National Bee-Keepers' Association?"

Mr. Bacon—The existing high freight-rates are due to the negligence of the majority of the honey-producers. These railroad men are not familiar with the production of honey. The best thing is to get your statistics together and show them; get some samples of the shipments of honey from your different colonies in Texas, and show them where it will be to their business interest to make the rates lower, so they will figure on this, and, consequently, the shipments will be larger, and this will put some more money into their pockets. These railroads are, as I said, divided into three classifications. First, I would suggest, take the Classification Committee that would cover the greatest movement of honey. First, I would say the Western Classification; and if you succeed, then go to the Southern and Eastern Classification, and state that you have got this from the Western; that will be very influential. If you will go before them in a business-like way, and put the matter before them, they will give you just as cheap rates as they can. I went down to St. Louis last year and got them to reduce the rates to the 6th, which got our rate down one-third, so that we can ship to-day into these Southern States for two-thirds of what we used to. I went down there with my boxes and samples, and I told them the amount of honey that had been shipped out of a certain place in Texas, and these men opened their eyes; and

I told them what the honey industry was in the South, and they responded.

Mr. Stone—I believe in all of this discussion, that any committee that we will appoint along this line will do us no good until we begin at the other end, and we learn from our General Manager that the trouble was soon gotten over when they got to the 5-gallon cans in a case together, and then it had to be iron-bound, and they got their rates. Now, we will never get rates on comb honey until the bee-keepers begin to do their part. I know men shipping comb honey to customers 200 or 300 miles, and they just ship it in 12 or 24-pound cases with the glass exposed, and not put together; but you pack your cases in a good box, about as heavy as two men want to handle them, then lay handles clear across the sides; and if the bee-keepers will do this they will have no trouble in getting these rates; we will get them for the asking. This is my experience. I have heard railroad men say that men will break the glass and eat the honey, and we will have to pay for it. I believe the trouble all lies with the bee-keeper in the manner he ships his honey.

Mr. Anderson—You are getting pretty close to me now. Why are we members of the National Bee-Keepers' Association? We figure it like this: Because in unity we think there is strength. We think through the united efforts of the bee-keepers of the United States results can be accomplished for the good of the honey-producers of the United States. Now, for instance, Mr. Muth, I understand, says that the Lord gives help to those who help themselves. The good efforts of Mr. Toepperwein did not reach us all; we did not think that we would have to pay full fare to get down here, and when I asked for rates they said, "We have heard nothing from the National Bee-Keepers' Association." Now, then, we have a good country in the North for producing honey, and there are good localities in the South for the bees, but when we have to pay \$450 to transport a car of bees there, we cannot afford to buy or sell them, when you can obtain a car to transport horses and other live stock for \$150. I know that through the united efforts of the Association, through the Manager, we can obtain better results. Now, I don't want to encourage all the bee-keepers in the South to

ship their bees up North when there is a honey flow on, but we expect to buy from them. Now these rates can be obtained if some one—the leading officers of this Association—are empowered, and will go at it with energy. I think we should not rest until we get it.

Mr. Holekamp—The work which Mr. France did before the Western Classification Committee was satisfactory as far as extracted honey goes; but there are these different committees, because extracted honey bears the same identification all over the country, while the Western Classification is 4th and 2nd class; therefore it seems necessary that these different Classification Committees ought to be interviewed wherever their headquarters are, and it ought to be handled through their headquarters.

Mr. Victor—I had a little experience in shipping bees to Colorado. They charged me \$200 per car from Wharton, Tex., to Colorado; the distance we can travel in 36 hours on a passenger train. While we are paying two or three times as much as cattle, the cattle have more attention than the bees, unless we instruct that they be treated right. We only get one transportation while with cattle we get two. I wanted to experiment along the line and take care of some honey in the summer and ship them back in the winter and increase them, but the rates were so high I could not think of it at all. We Texas bee-keepers sometimes have a good many bees to spare; we can look ahead and see if our seasons are not going to be very good, and if the rates were not so high I think we could ship bees from Texas to other points to quite an advantage, and I believe if the railroad companies would take this matter under consideration it would be easy for them to see that by giving us a lower rate on bees, they would have more to handle, which would more than over-pay the difference on the present rate.

Pres. Dadant—We should go ahead and try to get a better rate, as this matter is of great importance to us. We ought to have a committee all the time interviewing those Classification Committees, so as to get matters reduced; and I believe we ought to require this Association to name the men who are to serve on this Committee. I believe also that the Board of Directors will willingly grant the sufficient

amount to pay for the expenses of the men who will interview those Associations. This matter is of importance to the bee-keepers.

J. Q. Smith—I think that that Committee ought to find out from the railroads what sized package would be acceptable to them, and have a satisfactory box, certain weight, and enclosed in a certain way, that would be acceptable to the railroad companies to handle. Now, in car-lots there is not so much danger, but in small packages is where the trouble comes in.

Mr. Kimmey—I wish to re-state that my motion was that this matter be referred to the Committee on Resolutions. This slip was handed to me; it reads, "Ship your honey in proper packages," and the man who handed it to me said, "I have handled it in small packages, and I have carried the package in my arms on account of the small packages getting broken." It is the duty of this committee to advise us what kind of package to use.

Pres. Dadant—It will save time to refer to the Committee on Resolutions, because they can discuss it and present it to us later.

The resolution was adopted.

ADVERTISING TO SELL OR TO BUY HONEY.

"Which would be the better way to advertise honey, in a bee-paper that bee-keepers read, or in a public newspaper that thousands of people read?"

Mr. Werner—I asked that question. I have advertised honey for sale, in bee-papers, and not gotten as much as a postal card; and then I have advertised in the St. Louis Post-Despatch and sold as much as 3,000 pounds of honey.

J. F. Teel—if I were going to try to buy a whole crop I might advertise in a bee-paper; but if I want to sell it out in local lots I prefer the newspaper. I have found the Dallas News to be the best medium to sell through, and I have sold something like 3,000 pounds from one advertisement.

Mr. York—I think it depends a great deal upon the class of people. If you want to sell to consumers, advertise in the newspapers; if to the dealers, advertise in the bee-papers.

ANY PROGRESS IN NON-SWARMING BEES?

"Has there been any progress made in the past ten years towards securing a non-swarming strain of bees?"

Mr. Chambers—I believe from my experience that there has not been any success. For 4 years I have had no swarming in my apiaries. I have had no success as far as I know, and I don't believe that there has been a practical advance in that line.

O. P. Hyde—I don't think the nature of bees today is the same as it was a few years ago. I think the nature of swarming is just the same, and they are swarming just as they used to swarm, because of instinct; and, so far as any progress being made in the bee within the last ten years, none has been made. You will see this in advertising, "A non-swarming bee;" but I think the non-swarming bees and the breeding of the long-tongue bees—there is nothing in them; I think it is only a catch to make a profit and sell bees. I think the bee's tongue is as long as it was a thousand years ago, and they swarm under the same surroundings. Now, I don't know if I have had two swarms this year. It is the nature of bees to swarm; give them plenty of room. If you want your bees to swarm, put on a box of sections and have nothing above and no foundation in the section, and your bees will swarm right away. Put on new supers, give them plenty of room, and see that they are off the ground.

Dr. Bohrer—Are there not some races of bees more inclined to swarm than others?

Mr. Hyde—Yes, sir; the Holyland bees are the hardest to control. I am glad you mentioned this. Another thing is to go through the hives and clip the queen-cells. I go through my hives once a week—just as soon as I think they are fixing to swarm; and then I go there and clip those cells; but the Holyland bee is the most prolific bee that we have in the South, and it is a bee that will breed up and make a strong colony quicker than any other race.

Mr. Victor—I cannot see why we cannot make selections in regard to the honey-gathering, color, or anything else. As for my part, with the same management I had a few years ago, I would not have over a fifth what I had when I commenced. I think the disposition of the bee can be selected in regard to swarming, and as to stinging; and I think the conditions under which we rear our queens have a good deal to

do with the disposition of the queens. If we rear our queens under the swarming impulse, those queens will naturally want to swarm more than those that were not around the swarming bees; and I am satisfied, so far as I am individually concerned, that my bees will swarm fully 50 per cent less than they would six, eight and ten years ago.

NON-SWARMING AND COMB-HONEY CONDITIONS.

"What is the best plan to keep bees in out-yards from swarming, when running for comb honey?"

Sec. York—Mr. Louis Scholl is asked to answer this question.

Mr. Scholl—I don't know whether I can answer that question, because I do not produce section honey as they do up North, and I always produce comb honey in connection with extracted honey.

E. J. Atchley—I have some experience along that line, producing comb honey in out-yards, and I have failed to prevent swarming, as a rule; but on general principles, the best plan under all circumstances is to try to have a virgin queen in each colony in the out-yard at the beginning of the honey-flow. In other words, I suppose that should mean apiaries where some one should be there daily, and our queen-breeders can nearly always have young queens maturing or hatching at any season of the year. I know but few instances where I had swarms in other sections on black comb where I had a virgin queen in that colony at the beginning of the honey-flow, and this is a pretty easy matter. Every man should study his honey-flow, and know just when it comes, and at the proper time arrange to have the queens in each colony.

Mr. Kimmey—Is the result accomplished by reason of the absence of the laying queen rather than the queen being a virgin?

Mr. Atchley—I like to have colonies that are queenless during a honey-flow. When we have a virgin queen in that colony it is supposed to be a colony that is well organized, and more bees can be supported from the brood, simply because there is less brood to care for and less pollen, and, consequently, the bees in the supers store more honey because they are in shape to do so.

Dr. Bohrer—My own personal experi-

ence is that during the swarming and honey-flow seasons, to give them plenty of room has something to do with it. I almost entirely use a two-story hive, and by extracting some of the honey above and using the queen-excluder; and if the queen is confined below, it seems to subdue the inclination to swarm.

Mr. Anderson—There is a matter in my mind that is very important, and now we are in the middle of our convention. It is going to trend towards decline from now on; members are going away because their tickets are exhausted, and they are needed at home, and we all have faith in the good judgment of our President in the appointment of committees. The question of freight-rates ought to come before the body from the Resolutions Committee this afternoon. Could the Committee prepare it this afternoon or this evening? We desire that no one leave until this is settled. Now, then, we produce bees and honey to sell, but the freight-rates are so high we cannot sell them. In the North there are as good members as there are here; they are not here because the tariff is too high. If they were here they would voice their sentiments as affecting the tariff. Now, then, we know that with this matter being put in the proper hands it is going to result in good.

Pres. Dadant—The Committee will make a report this afternoon in regard to the transportation question. Now, Mr. Adkins started to make a statement in regard to a personal matter, let us hear from him.

Mr. Adkins—I ask that we adjourn till 2 o'clock this afternoon.

The motion was seconded and carried.

SECOND DAY—AFTERNOON SESSION.

The members were called to order by President Dadant, who said, "We are yet without the papers that were to be read, but some one has gone to the postoffice for them, so we will proceed with the questions until the papers come. The Secretary will read the next question.

YOUNG QUEENS TO PREVENT SWARMING.

"Can I prevent swarming by the introduction of young queens?"

Dr. Bohrer—As no one seems to want to take the matter up, I will give my

own observations. I have given a queenless colony a queen just before she was hatched, and was almost white, and sometimes they are well received, and I have never known them to swarm again. I don't know whether there would have been any difference if I had introduced a fertile queen. When I was a queen-breeders, the queens were almost white when they were first hatched out. Walking about among the bees in Kansas, I think year before last, I tried that sometimes and the bees would not take to the queens instantly, and would not accept them, but I did not try this year, and do not know how they would have received them; if it had been a fertile queen I don't know what the result would have been. I might say that the first time I ever saw this done was in the apiary of Mr. Langstroth, in Ohio, and when she came out she was not yet colored, and in a half or three-quarters of an hour she had begun to turn and seemed to be paying no attention. Mr. Langstroth said, as a rule, they were accepted when they first emerged. But as to a means of preventing swarming, I don't know.

Mr. France—That varies according to the latitude and condition of the season. If a honey-flow is coming in rapidly, and the swarming fever has already advanced, it is pretty hard to stop it. The time to check the swarming fever is before it has fully developed. I think a change would check it.

Mr. Hatch—I have tried almost every kind of method that has been suggested, and all the methods I could think of, and have always found fault with every one of them. One plan would weaken the colony so as to cut off the honey-flow, and another plan would weaken me so I was not fit to get the honey, and so I let the bees swarm. One plan is to put a queen-excluder above the colony, and put a hive on the lower box.

PREVENTING HONEY-GRANULATION IN GLASS JARS.

"How can extracted honey be prevented from granulating after being put in air-tight glass jars?"

Mr. Holekamp—There is being put on the market honey from California that is claimed doesn't granulate. Now, our honey granulates, but there is a way of preventing this granulation, because

this California honey doesn't granulate. I would like to know if there is any way of preventing granulation without adulterating honey, without changing the character of the honey?

J. F. Teel—I was brought up in Alabama, and in that country there is a grade of honey that never granulates. It is also true in Mississippi. While it is not a real, first-class grade of honey, it is fairly good, and people prefer it, who are accustomed to it, and prefer it to real white honey; but there is a honey that is pure that doesn't granulate.

Mr. France—I will say that of some 60 kinds of honey over the States I have been learning something. I find that the honey from the North has a tendency to granulate much earlier than that in the Southern States, as a general rule, so I believe there is something in the latitude. The flowers and the locality have something to do with the granulation.

Mr. Rouse—My experience is that extracted honey, well ripened, will not granulate. I have had it in an open room, that is, the shop or factory where I work, and I have kept it there all winter and it has never granulated at all. It was well ripened when it was extracted. Sometimes it granulates and sometimes it doesn't, but I cannot tell you why. I think there is an element in the honey or in the weather, or something.

Dr. Bohrer—I think the kind of honey has something to do with it. In Central Kansas alfalfa honey will granulate sooner than any other honey. I don't eat anything sweet at the table except honey, but at home I drink hot water, and I season it to taste with alfalfa honey. My folks have a large bottle with a glass stopper, in which they prepare this honey, but I have to superintend it and put it in warm water every two, three or four weeks, so it will not granulate. Now, I have no other distinct and superior variety of honey that I am able to speak of. The fruit blooms are consumed during the breeding season, preparatory to the main honey flow. The kind of honey has something to do with the granulation, and I don't know of any preventive, except warming it in warm water about half an hour.

Mr. Hyde—I have had a little experience with it. I find that there are

two conditions that will granulate our honey; that is, the coming of the cold weather will always granulate all of our Texas honey; but we have a honey here we call the "catclaw," and we sometimes get what we call a crop of 30, 40, to 50 pounds to a colony and this will granulate in July or August. We always harvest it before the first day of May, and it will granulate when the thermometer stands at 90 or 100 degrees. Our catclaw or mesquite honey will not granulate until the coming of cold weather; so the cold weather has something to do with it, I think; but the source from which it is gathered has more to do with it. I had a vial of honey shipped from Cuba, from one of our Texas bee-keepers, W. W. Sommers. I kept that honey for two years and it never granulated, and the same can be said of the California honey; it will not granulate under two years. The granulation is caused from the source from where it is gathered. Is there anyone here who knows what the honey is gathered from in California? I would like to hear.

Dr. Treon—with reference to the granulation of honey, I want to give the bee-keepers my experience, while I have not been in the business over four or five years. I had an early crop of honey that comes from the catclaw; this is our first surplus crop, and some of this granulated before it was all seasoned. I don't know of any other honey that granulates as quickly as our catclaw honey. As Mr. Hyde just said, I saw some that was brought from California, gathered from sage-brush, and it had been in a bottle and was as clear as I ever saw. I saw it in Hot Springs Ark., about a year ago. Now in reference to our other honey, the mesquite honey is a little slow to granulate, but as Mr. Hyde said, it will granulate on the coming of cold weather. Horsemint honey will even granulate in hot weather.

Mr. Laws—My experience is that all early honey will granulate much quicker than the honey produced in the Fall. Our catclaw and waheah will granulate sooner. I pack the comb in 5-gallon cans, and unless I sell it soon it will granulate. Our fall honey does not do this. Our honey that is gathered in rainy or moist seasons granulates slowly.

Mr. Teel—I went over into Uvalde

one day, and slept that night under a catclaw tree. The next morning, when I woke, the first thing I noticed the bees were gathering honey from this brush. By 12 o'clock the temperature was warm and the honey was candied. It candies every 24 hours in August over there.

J. M. Hagood—I think sudden changes of the weather are the causes. If we all had cellars to store our honey in, I don't believe we would be bothered with granulation so soon.

Pres. Dadant—I personally have no objection to this. My experience is that early honey granulates before the fall honey is gathered; it is something in the time in which it is gathered, or the quality.

J. A. Stone—I want to offer an objection to the cellar; it will cause fermentation of the honey. If you had a furnace it will keep it all right; you want a warm place.

Mr. Teel—The cellar won't work in the South.

D. C. Milam—I wish to say from experience, that the waheah granulates quicker than the catclaw. I have extracted honey in the evening and next morning it would be granulated. Catclaw blooms in May, and its honey hardly ever granulates until some time afterwards. In regard to fall honey, I have also extracted fall honey from broomweed, and the next morning it would be granulated, and would not run; so the fall and spring honey granulates alike; but in warm weather it will not granulate as quickly as it does in the fall.

Pres. Dadant—in our climate the early honey granulates and the fall honey remains liquid.

Mr. Jones—I am from Uvalde County, Texas, and I agree with Mr. Milam. Our waheah honey granulates much quicker than catclaw. Now, our fall honey granulates very quickly, and is thick. This is my experience.

Dr. Bohrer—What do you do to turn it?

Mr. Jones—Nothing, only to heat it. As this man stated awhile ago about unripe honey, it granulates on the bottom, but it never granulates on the top; you will always find the granulation at the bottom.

Mr. Parsons—We produce very little extracted honey, but we pack our honey somewhat like the Texas bee-keepers,

that is, a portion of it, that which will not injure the comb honey that will do to case, and ship it. We put that into tin boxes and extract a portion of it. I first fill the vessel full of the comb, then pour around it the extracted honey, and where I can put that honey into the cans and seal them as soon as it comes off the hives it does not granulate until the next year, probably late in the spring or the summer. If I wait until cold weather comes, along at this season of the year, to put it up, then by next spring it is almost a solid granulation; and it does not granulate that year if I pay proper attention to it, and by proper attention I mean keep it dry. I do that by building charcoal fires in my honey-room at intervals, owing to the state of the weather. If the weather should be damp and foggy I then go to the honey-house, build up a fire and keep it there until the house is dried out; but if, from any cause, I neglect it, then it granulates in the comb, and I think probably that would help out in almost every instance. If you will keep the temperature from getting down too low, or getting damp, it will do away with a good deal of the granulation.

Dr. Treon—I want to ask a little information and at the same time make some statements. The way I put up honey in this part of Texas, to prevent granulation of our catclaw honey, which is our first crop, I heat my extractor. We produce chunk honey; we fill the can partially full of comb honey; then pour in the extracted honey, then fill the can clear full. We cannot fill it full of chunk honey. With reference to granulation, I have had catclaw honey that will granulate in the spring and stay that way all the fall. What I wanted to ask was this: About 3 years ago we had a good honey-flow in this country—the majority of it was horsemint honey; we had lots of rain. This honey was sealed up and underwent a fermenting process, and the seals burst. I would like some one to explain this. In two or three weeks the honey would sour in the can.

Mr. Hyde—I didn't make myself quite plain when talking awhile ago. I never designated the different kinds of honey. Our chunk honey will granulate just as quickly as pure extracted honey, but our one-pound section honey will not granulate during the first winter.

Pres. Dadant—Now, we will come to the question of fermenting and the bursting of the caps. I have seen that quite often, which usually occurs with unripe honey; that is, honey that is not matured when capped, and it will ferment and burst the cappings; this is the case with basswood honey, but with no other kind.

Will Atchley—I have had some experience with the honey, and it has mostly been horsemint. I tried some experiments with it and was successful. Before it was sealed up, I carried it almost to a boiling point. The comb honey, I simply stacked it on. You take thin honey that is fermenting and it will improve from heating.

W. H. Laws—The case with this horsemint honey, if left with weak colonies, in my case, when it was placed over weak colonies for sealing and curing them, it failed to do it. I have seen this honey almost boiling out of the cells.

J. A. Stone—I have had honey that was fermented until it was not eatable, not marketable at all, and by heating it I could cure it entirely, and I do not heat it to the point of boiling.

Mr. Teel—I have had a good deal of experience where it was newly sealed, but I believe that it was caused from combs that had got a little moisture in them, a little wetting in the fall before, and the sour, vinegar-like substance would settle in the spring, which caused the fermentation. The best thing, is to do away with the combs when they get in that shape.

Mr. Jones—I have had some trouble along that line. Maybe it would be in a low place and a wet season, so I attribute it to the moisture that rose from the ground; that the combs absorbed this, and caused them to break. I have seen it in one-story hives often, and where the ground was damp all the caps, would swell; but I have never noticed it where I had bottom-boards.

SWEET CLOVER SEED.

"Where can I get sweet clover seed that will grow?"

Mr. Stone—I think Mr. Holekamp can tell us.

A Member—I just want to say that I bought some sweet clover seed from an Ohio firm, I think about three years ago, and tried it for two years and never got it up at all. The last year

I soaked the seed 24 hours, and planted it and it is up, and the clover is growing nicely now.

Mr. Holekamp—Two years ago I bought 100 pounds of sweet clover seed, I do not know who sowed it, but I understand that wherever these men have taken their Sunday afternoon walks that the clover grew all around there, and it must grow there else they would not say that. I don't say that they scattered it!

Mr. Kimmey—It is impossible for me to understand sweet clover not growing. I can not conceive how anybody can not make it grow, except people who don't want it; it grows like a weed. It has just occurred to me that sweet clover ought to be sowed in the fall.

Dr. Bohrer—The question with us is how to keep it from growing. I came very near taking up 100 plants and giving to the bee-keepers; it will grow, and can be transplanted the same as cabbage plants; then take the plants up, set them out where you want them to grow and you will never have any trouble. If you allow the seed to get musty then it won't grow; and I want to say that if any bee-keeper will send me one cent a plant, I will put up a plant and send to him this fall or next spring.

Mr. Stone—in Illinois, one of the professors at the University has discovered that there is a bacterium that is always on the root of the sweet clover. If they can get these bacteria, they say it will grow anywhere. They are advised by the professor to scrape up the dirt where sweet clover has grown, and sow it with the seed.

Dr. Treon—Most of these gentlemen who have been talking about sweet clover happen to live some place where it is raised. We people in this country have such long drouths that it has been impossible to plant it without irrigation, and even the alfalfa does not grow where it is irrigated. It may be due to the lack of bacteria. Now, I have what looks just like a tobacco leaf, and we are calling it clover. That is the only form of clover in this country, and it grows wild. I have seen sweet, red and white clover, but I never saw anything like that, and the bees gather lots of honey from it. There is very little of it in this country. If we can make sweet clover grow here, this will be an ideal bee country.

The Secretary then read the following paper by Mr. E. D. Townsend, of Remus, Michigan:

THE PROFITABLE PRODUCTION OF EXTRACTED HONEY

In assigning me this topic, I do not suppose our Secretary had in mind that I would say very much new or startling on this old, worn subject, but we all know that there are probably no two extracted-honey producers who follow the same, identical procedure clear through the season in producing a crop of honey.

that is, the small 10-frame Gallup and the large 10-frame Quinby almost always showed up *poorest* at extracting time, and, on the other hand, those in the 13-frame Gallup and 10-frame Langstroth usually showed up *best*, with the 8 and 12 frame Langstroth and 8-frame Quinby a close second.

After this long comparison, covering several years each, many of the comparisons being with large numbers of colonies, I do not hesitate to say that for this location and my management, there is no size of hive that will produce



E. D. TOWNSEND.

Admitting this to be a fact, it is evident that we are not all producing extracted honey to the very best advantage, which means at a less profit. Of course, the location, the environment of the bee-keeper, the number of bees one expects to handle—all have a bearing when discussing this subject.

Just a word about hives, then I will be ready to take up the main subject. We have had extensive experience with 10 and 13 frame Gallup, 8 and 10 frame Quinbys, and 8, 10 and 12 frame Langstroth hives. During the whole 30 years we have kept bees, many times the different sizes and styles were in the same yards, so comparison of the different styles and sizes were easily kept track of. The results are the two extremes;

more extracted honey, one year with another, than the 10-frame Langstroth.

Then, our preference is for a 10-frame body, using 8 of the regular Langstroth frames for our extracting upper-stories. This size and style of hive, and upper-story, suit us best, for our system of management, which I am about to describe.

The system we practice and recommend for this location (northern Michigan) for the profitable production of extracted honey is as follows:

At the close of the season (during August in Kalkaska Co., and September here at Remus), our colonies are all "hefted," and any we think have less than 25 pounds of stores for winter are fed up to 30 pounds. This gives us

from 25 to 30 pounds of winter stores per colony—ample to last until the surplus season opens in June.

Our chaff-hive colonies are packed for winter about Oct. 1; those in clamps the last of November. The latter are set on the summer stands as soon in spring as the frost is out of the ground, usually the last week of March. These are wrapped in building-paper for spring protection.

There is nothing more done with either paper-protected or chaff-packed colonies until May 20 to 25, when the paper is removed from the clamp-wintered bees, and the chaff removed from the chaff-packed colonies, and upper-stories are given to all the medium and strong colonies. Those familiar with this locality, will recognize this date as being about two weeks previous to the opening of the main honey-flow in June. At this date our freezing nights are usually over, and our colonies are getting strong, although there is no honey coming in during this period. Were we to leave our bees in one single story, many of them would feel crowded, and swarm at the opening of our main honey-flow. Others that did not swarm would sulk, and likely store only a part as much honey as if they had been supplied with an abundance of empty comb-room during this period. This abundance of comb-room keeps the bees in that condition so essential for the best results in honey-production. The old way was to tear down the strong colonies to build up the weak. While the results will be about the same, this handling of brood-frames is neither practical nor profitable in extensive bee-keeping. One visit a week during the honey-flow, to give comb-room to store honey in, is all that is necessary, and as we have comb-storage to hold our crop, and do not extract until a week or 10 days after our white honey crop is over, one man can attend to four or five established yards of 100 colonies each, and do all the work until extracting time, when additional help is employed.

With this system, no queen-excluders are used. Put upper stories on top. While the queen will occupy the first upper story given, by adding additional upper stories on top, she will be crowded down into the hive below long before extracting time; while if this first upper story given, now containing brood, were to be lifted up and empty combs placed between, and were to continue

this practice of placing our empty upper stories next to the hive, we would be quite likely to have the whole brood-nest in the upper stories at extracting time. But by placing the upper stories always on top, without extracting, we have been able to keep down swarming, and have an extracting department practically free from brood at extracting time. We have used queen-excluders extensively for several years, and find that about every third year we have excessive swarming when excluders are used; and as we get practically the same results without them, with the above management, we are discontinuing their use.

Each yard is provided with a 12 x 16 foot sectional honey-house, with all the necessary paraphernalia for managing them, so there is no moving of tools from place to place. This makes it possible to run one or more crews at extracting time as occasion demands.

Keep piling on empty combs clear through the season, being careful towards the close not to give unnecessary room, or, in other words, get every upper story sealed and finished that is possible, as sealed honey is of a much better grade than unsealed, even when left on the hives several days after the season closes, as is our practice.

A week or 10 days after the season closes—usually the last week in July in this locality—we begin extracting. As we have added all our upper stories on top, all our partly full upper stories will be on top at extracting time. These partly full upper stories are all taken off, and extracted separately, and the honey is sold at a less price than our best grade. This second-grade honey is as good as, or better than, most of the extracted on the market.

With this method we get about $\frac{1}{4}$ of our crop in No. 2 stock. The No. 1 stock is put into new 60-pound cans, and brings about 2 cents a pound above the market price, with more customers than I can supply.

In conclusion, I would say: Don't do unnecessary work with the bees. Don't do work that the bees can do just as well as you can. Don't handle brood-frames. Produce a superior article of honey, then ask a good, fair price for your product.

This is an outline of the way we are managing in the profitable production of extracted honey.

E. D. TOWNSEND.

Mr. Holekamp—I use the 10-frame hives, and if I don't use queen-excluders my queens will go up all through the hives; besides that, it makes my honey dark. I get a much better grade of honey than I used to get. The honey is clear, and it is easy to do the work, especially when fall comes I do not have to put the frames of brood down; the brood-chamber is in good condition. I raise the front of my hives about one inch, which I believe assists the bees in coming into the hives, at least I find that since I raised the hives that my bees work quicker, I mean they fly into the hives without crawling on the entrance floor. There is only one objection, and that is, a person waits too long without taking it out; but we had an early cold spell this year and I have not tried them, still I don't see anything hurt. The hives are heavier this year than usual. Now, I am from St. Louis, and a good many people think I cannot get any good honey. Two years ago I had about 200 colonies of bees, and I extracted from them about 8,000 pounds of honey and left 10 or 12 pounds, for spring feed. This year I have about 110 colonies and got about 4,000 pounds of honey. I put on supers as soon as I think my bees will need them, usually about May 20, and as soon as I think the first supers are about half filled I put another underneath. This year our bees worked all summer. I have some colonies which stored from 100 to 150 pounds of extracted honey, while the weaker colonies did not do well. A good many colonies were wild bees, which accounts for the fact of the small crop. If the bees had been kept in a fair condition I believe we would have had a better yield. We have a good deal of sweet clover which helps our honey crop. Comb honey is an entire failure with me.

Dr. Bohrer—Do you get ready sale for the extracted honey there?

Mr. Holekamp—Yes, sir.

Dr. Bohrer—I think it is known by a number of members that I am engaged almost entirely in the production of extracted honey, for several reasons. I believe it to be the most profitable method of managing an apiary where I live, and it is certainly the most wholesome form to be taken into the human stomach. And I think it saves the bees very much time and labor. A great difficulty is taking care of combs, and it

requires some care. As to the manner of manipulating the frames during a honey-flow, I use the queen-excluder in order to keep the queens from going above. And I empty the honey out above and put down below for the queen to fill again, and it is the most profitable manner for me. The people are acquainted with me all over the country, and outside of it, and I find no trouble in selling my honey. I don't sell to the merchants, because they want me to take goods in exchange altogether, and I don't live on goods altogether. I put my honey up in 5 and 10 quart vessels, and a great many people will buy a quart or a pint when they use it. But taking it all in all I find it to be the most satisfactory and the easiest manner of managing an apiary. I am not in love with putting sections together.

Mr. Kimmey—The gentleman has stated that the greatest difficulty he has found is in preserving the combs for future use. For myself, I would like to know how he overcomes it?

Dr. Bohrer—I have a house that is closed with ordinary doors, and hang the frames away there. I take the empty hive-bodies and put the frames in them and store them away, and then put them away as near dry as possible, and I don't have a great many millers, yet I have some; they will get in there occasionally.

Mr. Kimmey—Do you cover those hives at the bottom or top?

Dr. Bohrer—I set the hives down on a plain board, and I don't see how anything can get under them, and the hives weight each other down; then put a cover on and put a weight on them. This is as near as I know how to get at it.

Mr. Stone—I would like to have the author of that paper here, so that I could quiz him. I don't see how he keeps the bee-bread out of the upper stories.

M. E. Darby—I will answer this gentleman's question. I just extract my honey and then put the frames right back into the supers, and when the season comes the frames are all dry, all the honey cleaned up, then I take the supers off. I have a honey-house and I have never yet had a moth to get into any of my frames. I live near Springfield, Mo.

Mr. Cook—I first store the hives and

empty frames, one on top of the other, but first making it so tight below that nothing could get in there at all. Then I put bi-sulphide in that.

Mr. Hyde—Some are discussing the moth-worms and combs; it seems to me that the subject was the production of extracted honey.

Pres. Dadant—It is the profitable production of extracted honey.

Dr. Bohrer—Mr. Townsend is all right. Now, in our locality that is all right, but he is not all right on the way we do up in this country. My plan is to put the empty frames next to the broodnest. They will work those empty combs much quicker than above. I also agree with Mr. Townsend as to the queen-excluder, but I said it does not make any difference if we run for extracted honey; we are not going to eat it, and it does not matter about the pollen that goes up there. After I get disgusted with them I call them "honey-excluders," for they certainly will exclude the honey, and exclude the queen, so she cannot lay. Now, that gentleman over there, I agree with him about the size of the hive, a 10-frame hive. I have said why I did not like the excluder, and, as I stated before, I don't care anything about the pollen, because it is not in the way; and if the queen lays up there, she will lay up there annually and go down. And by the time you go to extracting again all the brood will be hatched out, and I don't care if I leave two or three combs in the second-story when I extract the first time.

Mr. Holekamp—I would like to speak about the moths eating the comb. Whenever I have comb without any pollen I have no moths; when I have pollen in the combs I have the moth. Then the second thing, I can taste the honey that comes from the pollen. I don't know how pollen tastes in your country, but it tastes very unpleasant in my country; it has a peculiar taste that I don't want.

Mr. Hilton—May I say a word in regard to the writer of this paper? I did not hear the paper read, but I live less than 50 miles from him, and there are a great many things that I know about Mr. Townsend and his methods, and there are a great many things that I don't know about him and his methods. This I do know, that he is one of the most successful bee-keepers in the State of Michigan; that he can produce the

most honey with the least expense, and can run the most yards with the least men. He is a man that would not follow the occupation unless it was successful, and he is successful as to the manner and the matter of the queen-boards. I am not in a position to say why he does some of these things, but I am able to say that he does the things that are successful to him and his efforts. Consequently, he is right, no matter whether it would work in Texas, or Arizona, or any other State in the Union; but in Michigan it is a success.

Dr. Treon—I want to say something in reference to the method of keeping empty combs; that is one of the serious objections to Southwest Texas in producing extracted honey, in my observation. I take a bottom-board first and put it down; then put two sheets of paper on that, then I set the body with combs on it, and between each body put two newspapers. When I take my supers out in the out-yards, put foundation in them, stack them up and set them on a cover, there are no moths there, and they fit pretty well, and I have a number of times found those frames full of webs, that are made by small worms; they got in there and laid their eggs. The only way that I know to keep the combs is to fumigate them with sulphur, or bi-sulphide of carbon. And if there is the least bit of pollen in them, there will be no bees to protect the comb, and the web-worms will be in there in 48 hours. We cannot produce extracted honey as well as you people that are farther north, because we cannot carry over the combs. We cannot use the extractors as you do, for the reason that our bees swarm awfully, and it makes no difference if you shake them or draw brood from them, they will swarm anyhow, and some have swarmed in a day or two after I had drawn two or three frames of brood.

Mr. Parsons—While we are not producing extracted honey at present, I think I will tell you what we did in Florida. At each out-yard we have a bee-house. When the combs were taken off they were carried off into the woods where the bees took all the honey out of them, and then were carried back to the house. The room was built 8 or 10 feet wide and across the side we put small sticks, say one or two, that ex-

tended from one side of the house to the other, enough to take our frames, and they were far enough below so the combs could hang in there. We put in other sticks until we got all the comb in the house. Then every few weeks we opened those sticks and burned sufficient sulphur to kill the larvæ that were there, and the fumes of the sulphur being so strong in there the moths were not very anxious to get in. In that way we never lost any combs. We have some trouble now in taking out the hives that are necessary to keep. We have houses built the same way, and there is no danger.

Mr. Hatch—I lost combs the past summer by the moths, and I was talking to a neighbor bee-keeper who said, "I see you are a fool, and you are as I used to be. If you will take these moth-balls and put among your hives, they will keep them out all summer long." I said, "Have you tried it?" and he replied, "Yes, I have tried it for 6 years."

Mr. Aten—In answer to Mr. Treon, in trying to cut off the moth, I have had considerable experience. I will say that it is impossible, I have taken combs and sealed them up in air-tight jars, and the moth would eat them up. The moth-eggs were laid in the colony of bees, and if you don't fumigate them they will eat the combs up. Fumigation by sulphur is a success with me.

T. P. Robinson—I am a honey-producer exclusively, that is, I produce something like 16,000 pounds of comb-honey, and there were only six or seven cases of extracted honey. In the production of extracted honey I tried to keep my colonies built up very strong. If the combs are too heavy to extract I move them to the super where the bees will hatch out, and the bees will fill them up, and I extract again. This year I extracted from the brood-chambers, and did not leave any honey at all. The bees did all right; in a few days they had filled the combs again. For the last ten years I have had no damage. But as far as the moths eating the combs, Mr. Aten is correct.

E. J. Atchley—I have had some experience in producing extracted and comb honey, and I think the locality has something to do with it. If I lived in Mr. Townsend's neighborhood, I would hardly take time to eat and sleep, or drink, until I found out from him his

management for the production of extracted honey, and I believe that if Mr. Townsend were in my locality he would have to change his plans to be as successful in Southwest Texas as in Michigan. Therefore we should run our bees to the best advantage according to our own judgment, and a little brood in the upper stories, or anywhere else in a hive should not bother us. It seems that the pollen packed in the combs can be taken out almost any time. And another thing in the production of extracted honey, my plan would be what is known as the "Dadant Plan." And as to keeping combs from moths, I think that every practical bee-keeper will keep the moths out of his combs. There are several ways. You can wash the extractor, and you can stack them up on the hives. I have three or four supers stacked on my hives today, and the strong colonies are protecting them. If I were in the North I would practice Northern methods, according to the most successful bee-keepers.

Mr. W. H. Laws, of Beeville, Texas, then read a paper on

THE COMPARATIVE PROFITS OF QUEEN-REARING AND HONEY-PRODUCTION.

In the discussion of the question of the comparative profits of queen-rearing and honey-production, I realize that it is a question that can not be settled by mere figures, made theoretically, but a question that can be solved only by years of practical demonstration right among the bees, and that, too, by a skilled queen-breeders.

To rear good queens, and to have them for the market at all times during the queen-rearing season, expert labor is demanded; without it, commercial queen-rearing is a failure.

To the man who can secure fair crops of honey, year after year, is not always due all the credit for his success; the bees do the labor, the locality furnishes the nectar, the bee-keeper only furnishing the hives and storage-room, and takes care of the swarms.

I know just such men who make money from their bees by honey-production alone, who give the bees no more attention than that just stated; and these men seldom see a queen-bee from one year's end to the other. It is unnecessary to say that such men, though

successful in honey-production, are totally unfit for queen-breeding.

Many persons, successful as honey-producers, and also familiar with the conditions generally with the interior of the hives at all times, become enthused at seeing the multitude of young queens hatching about the swarming period, and conceive the idea that if they could only get all these young queens mated, and sell them at a dollar each, (by advertising a little), they would see the dollars roll in, while the bees were waiting for a crop of honey!

There is only one reason why a person should embark in the queen-business in a commercial way, and that is environment, coupled with a natural love for the business.

By environment, we mean where a person is so situated that he can not secure a marketable product of honey from his locality, or where the flow of nectar is slow and of long duration, so that the bees use the greater portion of the season in swarming, or as was the case with myself in a former locality where at times the honey was so bitter that it was impossible to dispose of it on any market.

Where the above conditions exist we can readily see where the queen-breeder might do well, while the honey-producer might have a pronounced failure.

On the other hand, any locality that has short, heavy flows, one or more during the season, and between these flows comparative idleness of the bees, these conditions would be much better for the honey-producer rather than the commercial queen-breeder.

The best possible condition, therefore, for the queen-breeder is one long-continued, slow flow of nectar throughout the entire season.

In my first years of producing honey, for the market, away back in the '80's, I lived in a locality that sometimes yielded bitter honey; this flow of bitter honey would usually come late in the season, after the white honey crop had been gathered. Some seasons, however, the late summer rains would bring the flow earlier, and the bees would store it right along with the white honey. This would spoil all for market. I remember one winter, when my honey-house floor gave way because of the weight of bitter honey stored for use in making increase the following season, before the busy season had arrived, I had

figured out that if this bitter honey was to continue to be a product of my apiary, I would better establish some better form of disposing of it than simply making increase of bees by the use of this honey. So before spring I had already determined that it would be better to turn the product of the apiary to first-class Italian queens rather than bitter honey.

Since changing locality, moving 700 miles further south, conditions and



W. H. LAWS.

honey-flow have wonderfully changed, and possibly had I not been in the business I would not be now known as a commercial queen-breeder.

My present locality, while almost an ideal one for the rearing of early queens, is also one that is ideal for an early white honey crop, providing weather conditions are favorable, which, unfortunately, have been against us for the past two seasons.

Then there are other features of the business that are to be taken into consideration—the ability of the breeder to rear good queens, and have them to ship promptly at all times, in and out of season, his aptness and fitness to make and hold a market, by prompt and

agreeable service; his prompt attention to correspondence; the satisfactory adjustment of all complaints; the proper caging and mailing of queens, which make tedious and sometimes long journeys through the mails; and his determination to stay with the business through adverse as well as through prosperous seasons. It is a combination of all these little details that go to make success, and it must not be forgotten that many long and weary hours must be put in at queen-rearing that are unknown to the producer of honey.

Since the keeping of out-apiarries for honey has become so practicable and popular, the advantage to the honey-producer exceeds that of the queen-breeders. Hundreds of colonies of bees can be run for honey, systematized into out-apiarries, and be made more profitable to their owner than if he were to devote the same amount of labor to the production of queens, and, necessarily, to a fewer number of colonies.

In the foregoing no mention has been made of the progress of modern or expert queen-rearing, for it is possible to rear queens at a greater profit now than in former years; but to figure the difference in the profits of queen-rearing and honey-production—just when and how this is to be done, I do not know where to begin, for so much depends upon conditions, the locality, and the man, that it would be mere guess-work.

We sometimes know of men who have produced 30,000, or 50,000, or 75,000, and occasionally a man that produces 100,000 pounds, of honey, in a single season, which when sold would bring the modest little sum of \$3,000 to \$10,000, I dare say there are none of our leading queen-breeders who realize half this amount from the sale of queens, not counting the fact that every apiary run for queens is weakened—if not ruined—by the excessive sale of this product. All colonies run for honey are easily kept in a normal, thrifty condition, while queen-rearing yards have frequently to be fed.

We now leave this subject to our brother bee-keepers of this Association, who may weigh the matter with their own minds, and render a verdict according to their judgment.

W. H. LAWS.

Pres. Dadant—The matter is open for discussion now. I think the rearing of

queens in the South is of great importance.

W. H. Laws—I wish to say that this matter is of but little importance to the honey-producer. I will also say that I have made a few figures. I think that these people have spent on an average of \$40 to \$50, and, figuring it up, it seems about \$40 per hour while we are in session, and I want to call your attention to the fact that a Mexican Supper has been prepared for our members.

Mr. France—I assure you that this is a part of the program that the Northern people appreciate, and in order to make everything satisfactory, Mr. Toepperwein says that it will be wise to go soon. The distance to this first-class Mexican supper is a little too far to walk, so we are advised to take the car. Mr. Toepperwein will go with the first section, and Mr. Laws with the second.

The meeting then adjourned until 8 p.m., and all attended the Mexican supper, given at the "Original Mexican Restaurant."

SECOND DAY—EVENING SESSION.

The meeting was called to order at 8:30 by Pres. C. P. Dadant. The first half hour was spent in listening to an address by Judge T. M. Paschal, who went to Los Angeles in 1903 to help bring the National Bee-Keepers' Association to San Antonio, his subject being, "The Bee-Keeping Resources of Texas."

Pres. Dadant—There was to have been a paper read at this time by Dr. E. F. Phillips, of Washington, D. C., on "What Science May do for Bee-Keeping," but as he has not arrived yet we will proceed with other business. The subject for the evening is the report of the Resolutions Committee on freight-rates. We will hear from the Secretary.

REPORT ON FREIGHT-RATES.

We, the Committee on Resolutions, recommend that the following resolution be passed by the National Bee-Keepers' Association, in convention assembled:

Resolved, That a committee of three be appointed by the President, of which the General Manager shall be one and be its chairman, for the purpose of securing more favorable freight-rates on the products of the apiary, namely: honey, bees, and beeswax; That the Board of Directors be requested to pass a resolution authorizing and directing

the General Manager of our Association to pay out of the funds of the Association the necessary expenses of the Committee, and such expenses as may be incurred in bringing before the railroad officials such articles as may be necessary to demonstrate the packages on which reductions are desired.

ROBT. A. HOLEKAMP,
JAS. A. STONE,
C. C. PARSONS,
Committee on Resolutions.

Pres. Dadant—The matter is open for discussion now, and I would like to hear from the members as to their opinion on these resolutions. Let us hear from Mr. France.

Mr. France—So long as my name is mentioned in the resolutions I ought to be quiet. That involves lots of work; it means hard work, and that committee will have more to do than you realize. I feel that it is of the greatest importance who that committee are. As for suggestions, the Resolution Committee has nearly covered it, what is expected. I don't know of any way that we can use the funds of the treasury to a better advantage than for something of this nature; for every one has more or less shipping, and will get direct results, whatever they may be.

Mr. York—Mr. Chairman, in order to do this I move the adoption of the resolutions.

Dr. Bohrer—I would like to hear the resolution read again.

Wm. Atchley—Does that include express-rates, or freight-rates only?

Pres. Dadant—Freight-rates only. It is more difficult to do anything with express companies than the railroad companies.

Mr. Anderson—I see dawning in the distance that which I have hoped for, at least ever since I have been a bee-keeper. The transportation facilities of the bee-keepers' products have been so inconvenient in many localities that it has actually put a stay on the progress of the industry. I have longed to see the time when the National Bee-Keepers' Association would be acknowledged by the railroad companies as a power in the Nation. I want to congratulate the Committee on Resolutions for the work they have done.

Dr. Bohrer—I, like Mr. France, think that when we tackle a question of this kind we have a big question to buck up against. All that can be done outside

of actual organization, not only through the State legislative body, must be done by appealing to the railroad companies ourselves, and bringing our committees to their special notice. I believe they are reasonable men, and something may be accomplished in that way. Now, I understand that much is put up in packages that are condemned, but if these packages are more secure the railroads will take them. This committee can bring this matter to bear and present it, not only to the bee-keepers, but to the railroad companies. There is not a man or woman that has any produce whatever but feels that extortions are practiced upon them. Years ago, up in Kansas, our railroads were controlled by the Inter-State Commerce legislation, but the State can only control the railroad company to an extent, and when it passes out of the State we have no control over it; and it is the duty of every bee-keeper to make an appeal to his Representative in Congress. Whenever the interests of the country are at stake it takes the people to do it; you have to appeal to your Representative. What is the condition we find now in our Legislative Assembly? Are the true representatives of all the industries of this country over-whelmingly in majority in the House and the Senate?

Pres. Dadant—I wish to call your attention to the fact that you are getting off the subject. Keep within the limits.

Dr Bohrer—I will do it. There is where you have to commence—you have to put representative men in these bodies, or you will not get justice.

E. J. Atchley—I think the question that is before this Association is one of the greatest importance that can come before this body, inasmuch as we do not consider it at all fair that the railroad companies charge us \$450 per car to transport our bees to Colorado or Utah, when a car of cattle will be carried the same distance for \$110. We have appealed as far as possible to the railroad companies, and the agents themselves have felt a surprise that we would have to pay this amount for a car when we attend to the bees, load them ourselves, take them off the cars, and bear all the burden of the journey, while the cattle are loaded by the railroad companies, unloaded possibly two or three times and fed, and they only pay \$110. Under the existing circumstances, when we take into consideration the rates on bees,

when we want to ship, it cannot be done, and I trust and hope that our President may appoint men that may bring to bear, with the force of himself, such a great need of a lower rate on bees that something will be done, and that we will get this lower rate in the near future. I trust he will use his best judgment in selecting this committee.

Mr. Hilton—The resolution that is before the body is certainly a very important one, and much has been said touching directly upon the subject, and perhaps some things have been said that did not touch directly upon the resolution. Having had some experience from a legislative standpoint, I don't know whether appealing to National Legislation would help us very much; but this I do know, the country is divided up into divisions by the railroad companies, and if we act in concert we must appeal to first one division and then the other, until we get the three divisions of the United States to act in unity, to get the best results. I think that the railroad companies are ready to act when they learn the situation, and I understand that they have been informed to the extent that they have made the concessions asked for, and as a committee-man for two years in my State, I found the railroads were ready to listen to men that would interest themselves, and railroad men and railroad corporations are just as ready to respond to the pleas of good men as the President of the United States, or any other man. And, as I say, if this resolution is carried, and this committee pursues its work diligently and personally, a better state of affairs can be brought about, and it behooves us to do the things that are going to help us and our fellowmen. And I say again, that I believe the railroad corporations will meet us with open hearts and open hands to do those things that will increase their business, and decrease our expenses and increase our profits.

Pres. Dadant—If there are no further remarks, I will put the question: All in favor of this resolution signify by saying Yes. Opposed, No. The motion is unanimously carried. The committee has asked that Mr. France act as Chairman. He is one of the best workers. The man who brought this before this meeting is Mr. Muth; he deserves to have a share in this matter, and should be upon the committee. I so appoint

him. The third man ought to be a bee-keeper who understands transportation and who produces a good deal of honey, and is acquainted with the railroad companies. Mr. Holekamp should also be on this committee; he has shown what he could do, and he would make a good member. So I appoint those three men.

Mr. York—This committee is going to have a good deal to do, and nothing would help them as much as to have a large membership in this Association. The railroad men are going to ask them how many are in it, and if they could say that they represent 10,000 bee-keepers in this country, they would prick up their ears and listen. I have understood that in some parts of the country the members are beginning to drop off a little bit. It seems to me that we ought to go out all over the country and increase the membership. A large membership means a whole lot, and when this committee goes before the Legislature it will stand a better chance of getting what it asks for. I agree with Mr. Hilton, that if we send out these three men, and they are backed up by a large Association, they are sure to win.

Mr. Stone—I don't think anything helped us to secure our Foul Brood Law but the members that were on our roll in the State of Illinois. I believe that Illinois has more members than any other State in the National; it is up in the hundreds.

Pres. Dadant—I wish to say that Mr. Stone knows what he is speaking about and I think it is through him that most of those Illinois names have been gotten on the list. I hope that the members will help add other members to the National through the State associations. Unity makes strength.

Mr. France—While we are on the subject of financial affairs, I will make the following statement, which is a little in advance: Between Nov. 1 1905, and Nov. 1, 1906, I received dues at 50 cents each, from 832, making \$416.00, and I have received the dues of 110 at \$1.00 each, making \$110.00. The resolution that we come in a body was first presented to the National Association by Mr. York at the Philadelphia meeting. The first State to take advantage was New York. My own State (Wisconsin) immediately followed, until nearly all of the States have taken advantage of it. Our expenses this year have been a little more than our total income, and you will see

where the expenses have been. On the postal cards calling for reports, I gave suggestions, wherein the National might improve. Too many have looked toward the Manager of the Association to do the work and to make the improvements. I cannot accomplish that alone; it needs your assistance, and those crop report postals with personal suggestions have helped me in more ways than one. I wish more of you would take advantage of the Information Bureau. It is worth more than it costs. I am glad this freight-rate question has come up. Then another question has come up: Cannot the National market the honey? I hope you will never ask the National to sell your honey. It is too big a job. But I do believe that all our State and local organizations can do a great deal in that line. Each bee-keeper ought to sell his own products. This has finally resulted in my getting up what I call a "Seal Label" for the Association's members.

Mr. Muth—Referring back to the committee on freight-rates, don't you think it would be a good idea to have the members write us suggestions?

Pres. Dadant—This you can call for, and let them understand it. Any suggestions to the chairman of the committee will be communicated to the other two members—any information in regard to rates, honey and beeswax.

THE LEAGUE FUND.

"Has the National Bee-keepers' Association received the fund mentioned at the last meeting, from the Honey Producers' League? If so, what is being done with the money?"

Mr. France—There was turned over to me on May 30, 1906, the amount of \$1408.27. There was to be a committee appointed to use it for the purpose for which it was originally intended. The Board of Directors were to appoint a committee. I was notified as Treasurer of the Association that I would be one of that committee, and was asked to suggest some others to work upon that committee. I said, "Let the President and Secretary of the League be the other two. The Secretary is expected to act conditionally, but the President, Dr. Miller, declined to serve, and until a third man is selected nothing can be done. We want a committee that will give it justice and satisfaction. I think, however, that in the near future the

fund will begin to move in the direction intended. It is not wasted, the fund is lying there, and there are no commissions on it.

SOMETHING HISTORICAL.

Dr. Bohrer—I was at the first National meeting of bee-keepers held in Indianapolis, in 1871. At that meeting we received a telegram from Mr. King the editor of a bee-paper, the name I do not know. He was manufacturing and selling a good many hives known as the "American Bee-Hive." At that time the ability and claims of Mr. Langstroth were called in question, and we received a telegram from Mr. King requesting us to meet the bee-keepers in Cincinnati the following February. We agreed to meet them there. Another association was organized called the American, and we concluded to meet one year from that time in Cleveland and unite the two. Mr. Quinby was elected president. I was elected as the vice-president. Mr. M. M. Baldridge and I were there. Mr. Langstroth was at Cincinnati. And speaking of the matter of pictures, we have the photograph of Mr. Adam Grimm. If any of the bee-keepers would like to see it, I would like for Mr. York to exhibit it, as he has it, I think. I also thought I had given him D. L. Adair's photograph, but I think that possibly I have that at home, and, if so, I will send it to Mr. York and have that published, because Mr. Adair, I think, perhaps, gave the first idea of the honey-section so extensively used among bee-keepers. He gave me one of his hives and sent it to me. I think there, perhaps, originated the idea of the section. That is about as much as I know about the first Association. In Cleveland it was known as the American Bee-Keepers' Association. The first one was known as the North American Bee-Keepers' Association. I think that the third meeting was at Cincinnati. That is the early history of this Association so far as I learned it.

P. D. Jones—I subscribed for the American Bee Journal in Cleveland, Ohio, in 1871, and have taken it ever since. Captain Hetherington, of New York, was also there.

Mr. Coggshall—I have had the American Bee Journal since 1861. It was published in Washington then. I have all the back numbers.

Dr. Bohrer—Does anybody know the name of the editor that published the paper shortly before the American Bee Journal was resumed?

Mr. Jones—I can not tell you now who published it, but I have all the numbers at home. I can tell you when I get home.

Pres. Dadant—These are reminiscences of our old members, and we are glad to hear from them.

Mr. York—I think it ought to be made a matter of record that Mr. P. D. Jones, of New York, and Dr. G. Bohrer, of Kansas, who were present at the first meetings of this Association, are attending this meeting.

NATIONAL OFFICE-HOLDERS.

“Is it true that some office-holders of the National Association are abusing the confidence of the membership for purely personal gain? A charge of this kind has been made against supply dealers.”

Dr. Bohrer—I will inquire who the officers are, except it be the President himself. If they are swindling anybody it has not hurt me.

Mr. Muth—I should think that such sorry questions should be thrown in the wastebasket.

Dr. Bohrer—I want to say this: We ought to be pretty certain that it has been abused, and if anyone knows of an officer that has been abusing this confidence, he ought to speak out.

DISTANCE TO BREED PURE QUEEN-BEES.

“How far should a breeder of pure queen-bees be isolated from all other bees?”

Dr. Bohrer—I don’t know of my own personal knowledge how close queen-breeding apiaries are situated to each other, but my own idea has been this: As different races of bees are being brought into the United States, these apiaries should be 12 or 15 miles apart. I know this, that bees will go 7 miles. I have timed queens that have left a hive and have been out $\frac{3}{4}$ of an hour. Now how far they have been I have no knowledge. How far the drones will go I don’t know, but I have reason to know that queens and drones will go a greater distance than 12 miles. I have known of two races being bred in the same yard and sent out over the country. Now, whoever these bee-keepers

are, they have not been sending out pure queens, and they ought to quit the business. Now, I have no ax to grind; I have no queens for sale and don’t intend to have any. I am not in the bee-business to make much money out of it, but for pastime, and I don’t want to quit it now. I am not going to give any names, but there are parties here who know something about it. If they are sending out different queens from the same hive, they ought to be notified to quit business, or be exposed. I know of one man that I understand had foul brood in his apiaries, and considerable money was sent in for queens, and he had the honor to notify them that he had foul brood and would not send out a queen. I don’t believe that he is the only man that would do this. But these are matters that we want to hunt up. If you have foul brood in your apiary, you need not be scared about this matter, nor ashamed of it, but it is harmful to keep it. It may be your fault, it is a misfortune, but go to work and get rid of it. The man who is sending out different races of bees, and breeding them side by side, is not working for the interest of the bee-keeping of this country. I don’t know the names of these parties, and especially those who are sending out four different varieties of bees bred in a small apiary of 24 or 25 colonies, all kept in one yard. We should work together and find out who those parties are, and quit patronizing them until they do better. I don’t want queens badly enough to get them from a man who will do business in this way.

Pres. Dadant—Are there members who have any experience in this matter, in regard to distance?

W. H. Laws—I have been wondering who in the world such charges could be brought against. Dr. Bohrer is very earnest in what he says. Since the introduction of the baby nuclei, I have known an honest man who breeds the Carniolan, Caucasian and Italian, and keeps them all in one yard. But he takes 200 or 300 of these baby nuclei and goes out far in the country with them, and these queens are mated to those drones. A few days afterwards he brings those drones in, and those bees come from the same yard. He is doing a good business, and a man that buys queens from him is getting fine stock. He has a few bees all kept in

the same yard, but the mating ground is in a separate place.

Will Atchley—I have had the same complaints come from a party, that I think he refers to, and I visited the same place and I found what Mr. Laws says is true.

A Member—I want to say that Dr. Bohrer is talking from what he knows, but that party was not from Texas. It has been asked that the National Association should look after the queen-breeders, and know that bee-keepers are getting stock true to name; that the Association appoint a committee to investigate this matter. There are some who are doing everything that is possible to breed true to name; we send to them and their bees are true to name when we get them; they are not satisfactory, and I think many times it has been in getting tested queens that have been hurt in transportation. Would it look reasonable that if you should buy a fresh-milk cow and ship her from home down to Texas, without any care, would you expect her to continue a nice fresh cow when she arrived? Would you expect this of a nice tested queen? Yet it is not the fault of the queen-breeders? I believe that some of us are inclined to criticise queen-breeders that are doing right, and need upholding in what they are doing. We should know that a man is shipping from an infected yard; those things ought to be investigated.

Dr. Bohrer—I want to explain in regard to the matter of queens being injured through the mail. I have not found much abuse in that particular. I purchased a queen from a Texas queen-breeders, and she was one of the best that I ever saw.

Most PROFITABLE RACE OF BEES.

"What is the most profitable race of bees for both comb and extracted honey?"

Mr. Stone—I think the Italian bee is the most profitable.

Mr. France—My observation from the State of Wisconsin says the Italian bee.

Mr. Victor—Yes, I think the Italian bee is the most profitable.

W. H. Laws—I would like to ask Mr. France if it is the improved or the 3-banded Italian he prefers.

Mr. France—I favor the 3-banded

Italians for their honey-gathering qualities.

Pres. Dadant—In Europe there are some countries where they criticise the Italian bees. I had the opportunity of investigating bee-culture and the Italian bee. The man who writes a book is very careful of his statements. Now, I took 12 of the leading works of Europe and America, two German, one Swiss, one Italian, one English, one Irish and two French, and I think one or two American. Everyone said that the Italians were more industrious. I believe that this is as good as can be given.

Mr. Stone—I would like to introduce the golden Italian, especially where I have any black blood in my colonies. You get good hybrids when you get the 3-banded bees.

Mr. Anderson—I stand up for the Carniolans, although I have not reared many. I have been using Italians principally until this year. I get more honey from the Carniolans.

Wm. Atchley—For 10 years I preferred the 3-banded improved Italians, but for the last 5 years the Carniolans have proven themselves superior to the Italians in my country.

THIRD DAY—FIRST SESSION.

After the members had assembled, they were requested to go to the City Hall, where a group photograph was taken. Then at 10 o'clock, a. m., the meeting was called to order by Pres. Dadant. The Committee on Amendments appointed last year was called upon to make a report.

Pres. Dadant—Mr. Holekamp was a member of the committee to divide the membership into districts in the different States.

Mr. Holekamp—I studied about this matter and found that the work which I had in mind for the directors was so great that it will be very difficult to find men who will undertake the work. Therefore, I think it best not to make any recommendations. I withdraw the proposition.

Pres. Dadant—You have heard the report of the committee. Under the conditions I think it will be well to accept this and discharge the committee.

On motion the report was accepted, and the committee discharged.

The Committee on Exhibits then reported as follows:

REPORT ON EXHIBITS.

We, your Committee on Exhibits, beg to report a very creditable exhibit of aparian supplies and honey. However, we consider it short in many respects.

The largest exhibitor, Udo Toepperwein, of San Antonio, Tex., shows hives of various kinds, both in the flat and nailed up honey and wax extractors, bee-smokers, and other appliances generally listed in the catalogs, besides bottled honey and beeswax. A nice feature of Mr. Toepperwein's exhibit was the distribution of delicious candy made of honey.

A. G. Anderson, Secretary of the Emery County Bee-Keepers' Association, of Ferron, Utah, has two jars of sweet clover and alfalfa honey, of light color and good flavor.

T. F. Bingham, of Farwell, Mich., has one of his latest improved bee-smokers.

L. Werner, of Edwardsville, Ill., shows a bottle of Spanish-needle honey. This honey is rather dark in color, and strong flavored, otherwise resembling buckwheat honey.

N. E. France, of Platteville, Wis., General Manager of the National Bee-Keepers' Association, has gotten up a neat Guarantee Label or Seal, for members of the Association to be placed on packages of honey for protection. Mr. France also has samples of different kinds of honey from 34 States, labeled according to their source. One reason for the small exhibit here at the convention hall is on account of the exhibits at the Fair.

Exhibits of this kind in connection with bee-keepers' conventions should be encouraged. It draws out much interest, acts as a source of advancement in bee-culture, and adds materially to the interest of the conventions.

LOUIS H. SCHOLL,
DAVID H. COGGSHALL,
A. G. ANDERSON,
Committee on Exhibits.

On motion the report was approved. Pres. Dadant—We will now have the paper by Dr. E. F. Phillips, of Washington, D. C., on

WHAT SCIENCE CAN DO FOR BEE-KEEPING

Science is classified knowledge. In Apiculture observations can be made in infinite number, but until the facts dis-

covered are systemized and classified very little advance can be made, and only with this classification does apiculture become an exact science.

By the majority of people science is looked on as something entirely apart from the practical. By most people a scientist is supposed to be a man who works on subjects which are of no practical use whatever. The criticism is heard on all sides that "book farming" is a failure, and that scientific men who attempt to write on practical industries do not know what they are talking about. In the first place we may as well admit that there is entirely too much truth in such criticism, but the fault lies not with science but with the men. Unless a scientist is willing and anxious to listen to what the practical man has to say, he can hardly expect to arrive at proper conclusions.

On the other hand, it is, to my mind, a serious mistake for the practical man to disregard what the scientist has to say. Scientific training fits a man to "put two and two together" and arrive at a conclusion. When a host of observations are made, not every one is qualified to study them and get at the bottom of the subject.

But for the fear of misunderstanding, let us confine ourselves to Apiculture, and see who are the scientists in that work.

In Apiculture the scientist is generally looked on as one who studies the anatomy of the bee, the effects of color on flight, or similar subjects of no practical importance. This is entirely and unqualifiedly an error. The man who analyzes the results of different methods of wintering, or the different ways of producing comb honey, is engaged in scientific work just as much as the man who works on anatomy, although he may not realize it.

Assuming then that scientific work is nothing but the systematizing of numerous observations, there can be no doubt in the mind of any one that Apiculture is sorely in need of more such work.

It must be admitted, however, that in speaking of scientific work in Apiculture the more or less theoretical problems are generally the ones to which reference is made. I shall, therefore, not speak so much of the need of scientific methods on problems conceded to be practical, as to discuss the practical im-

port of questions now considered as merely theoretical by most bee-keepers.

At the Chicago meeting of this Association, I spoke at some length of the need of better bees. Here is one place where science can work untold wonders for Apiculture. Of recent years breeding has become a subject of very general discussion, and much scientific work has been done on variation and heredity, the ground-work of breeding. By continually selecting first-class breeding material a bee-keeper may improve his stock until he really has a superior line of bees. He cannot expect, however, to make progress which will be lasting unless he knows something about the hereditary transmission of characters, and the variations according to the laws of chance of all characters. The only way for a bee-keeper to become a breeder is by studying scientific works, and doing some work himself, and I regret to say that very few of our queen-rearers are doing this. Breeders in other lines of work are studying and working on these problems, and their results can be read by breeders of queens. Here science can help Apiculture.

As an example of what science can do for bee-keeping, take the work on bee-diseases. We know the causes of our two worst bee-diseases, and by comparisons (scientific method) we know what to do to destroy disease. Without scientific work on this subject the practical bee-keeper would be absolutely ignorant as to the nature of the different diseases, and cures would be mere accidents. As an example of the ineffectiveness of efforts of practical men in the face of a lack of scientific investigation we have only to cite the discussions of bee-paralysis, as it is called. A number of practical men, thoroughly competent from a practical standpoint, have undertaken to write on paralysis, and several cures have been advocated for this particular disease. No one can doubt, however, that we are still in ignorance of a universal cure and I am inclined to the opinion that we will remain in this state until the cause of the disease is determined by some one thoroughly trained in methods of scientific observation. In his book, "Bees and Bee-Keeping," Cheshire mentions a bacterium, *Bacillus gaytoni*, which he says causes the workers to become shiny; but this is no proof that *Bacillus gaytoni* causes paralysis.

Bee-Keeping would be benefited by work in various branches of science. Take, for example, work in chemistry. Those who have had anything to do with having samples of honey analyzed cannot fail to conclude that the work that has been done so far is entirely unsatisfactory, and that there is great need of better methods of honey analysis. The polariscope method is not reliable enough so that adulteration can be determined with certainty, because honeys from different sources differ so greatly in their polarization. The same condition is true to almost as great an extent, of wax-analysis.

While the bee-keeper must depend largely upon natural forage, the fact still remains that the industry would be greatly benefited by a careful study of honey-producing floras. We need to know the exact climatic and soil conditions necessary to the growth of all our honey-plants so that they produce nectar, for with such knowledge we would be able to make plantings of value. The exact geographical distribution of the honey-producing plants, and the marking out of the areas in which given plants secrete nectar, would help greatly.

The bee-keeper would be greatly benefited by better information as to the function of the bee in fertilizing flowers. At present it often happens that there are times when bees are looked on as very detrimental; but if the apiarist has an array of actual facts to present in place of the generalities now indulged in by the journals, it would have more weight with municipalities which try to banish bees, and in similar cases.

And now as to scientific work on the bees themselves: Those present may remember the bootless discussion in the bee-journals some time back as to whether bees pack pollen into cells with their heads. In the face of such discussions the question might well be asked why some one did not look. It was argued that the head of the bee is hard, and that it could pack pollen if it wished to; but the writers were content to argue, and not investigate, reminding one very forcibly of the academic discussions of the middle ages.

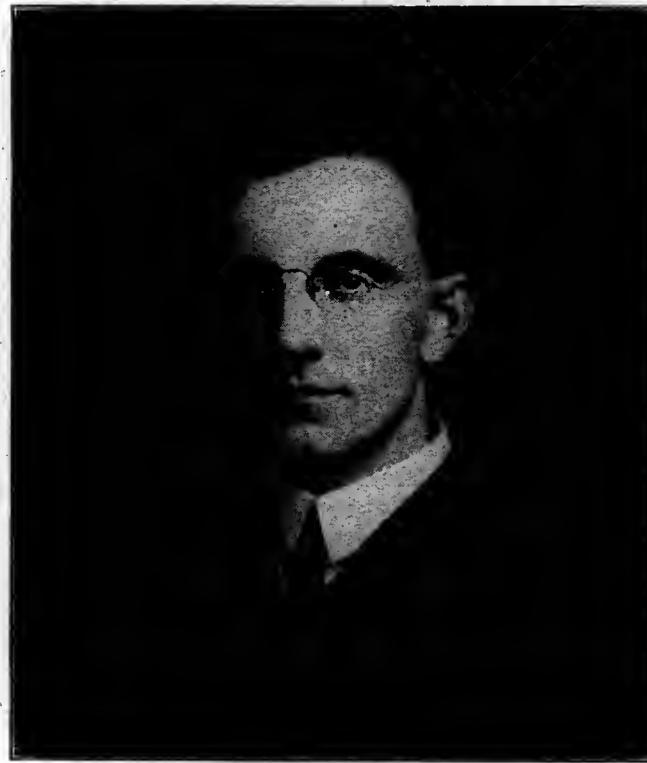
Properly constructed observation hives are of some value in such a case. Fortunately or otherwise, we have a few writers for apicultural papers who feel fully competent to cope with any sub-

ject connected with bees, but just how much weight we may give to their expressed opinions can be determined only when we find out how much observation they have made. Random discussions based on compilation of obsolete work are of meager value.

There are numerous facts concerning the habits of bees inside the hive which are highly important from a purely practical standpoint, which can be determined only by scientific observation. In spite of the fact that the bee-keepers have for years made observations con-

cerning preparation for swarming, but we still do not know why it is that this confinement produces the effect of the "swarming fever." If we could but analyze the swarming impulse we would, beyond all doubt, be able to devise vastly superior methods of queen-rearing. It need scarcely be pointed out, also, that a knowledge of swarming would enable us to devise methods to prevent that bane to the bee-keeper, and this would benefit many more bee-keepers than better methods of queen-rearing.

We need also but mention the desir-



DR. E. F. PHILLIPS.

cerning the swarming of bees, we still do not know just what it is that causes a swarm to issue. This is of paramount importance. Possibly some of these problems will forever foil the investigator, but it does not pay to be pessimistic.

We know that under certain conditions queen-cells are started, and we also know that there are some conditions under which the workers feed the royal larvæ better than other. By the use of the swarm-box we are able to produce these conditions of superior feeding so that the larvæ are fed as well as dur-

ability of knowing the methods used by bees in storing surplus honey. This is important. If honey is first deposited in the brood-chamber and then carried to the surplus chamber, then it is important that care be exercised in feeding sugar syrup, for under such circumstances any sugar syrup left from the feeding for winter or spring stimulation would possibly reach the super, and the bee-keeper be open to the charge of adulteration. If such is not the case sugar-feeding before supers are put on is justifiable; but this can be determined only by scientific investigation. The

care of larvae is an unknown factor in bee-life, as well as many other points which may have an exceedingly important bearing on practical work.

As far as the hearing of bees is concerned, we may be safe in saying that it matters little to the bee-keeper whether bees hear or not, but, still, almost every bee-man wants to know. No organ of hearing has yet been discovered, and the evidence that bees hear is extremely meager. In spite of this fact the majority of persons familiar with bees believe that bees do hear. The arguments generally advanced as proof of this are absolutely valueless, and we await impatiently a scientific investigation.

Not only will Apiculture be benefited by new scientific work on subjects relating directly to bees, but comparisons with results obtained in other fields will yield results of great value. Bee-keeping is not a science entirely apart from all others, but is most intimately connected with many sciences. For example, if we look at bee-keeping from the standpoint of breeding it becomes evident that it is not necessary that all the principles of bee-breeding be worked out on bees. From multitudes of results in such work it is evident that a few underlying principles are concerned in the improvement of a species, race, or variety, by selection; it matters not in the least to the bee-breeder whether these principles are discovered by work on bees. There are already scores and hundreds of papers detailing the methods used by the breeders of other species, and these papers await the persons who are to take up the one great problem of Apiculture. Improved appliances and manipulations are valuable, but their importance becomes infinitesimal when considered with the improvement of the bees themselves. The problem is so great that it is not to be wondered that it has not been undertaken systematically, but the day will come when it is begun, and then the results of other scientific breeders will be of inestimable value.

The second great problem which confronts American bee-keepers is the diseases to which bee-flesh is heir. Perhaps no one factor is so great a drawback to advance in Apiculture. The two virulent diseases of the brood are spreading through the States of the Union at a rate which is truly appalling,

and heroic measures are necessary. I do not wish to become an alarmist, but during the past year I have traveled several thousand miles studying conditions of diseases and the rapidity of their spread, and I cannot refrain from saying that conditions are serious. The scientific work which has already been done on the subject is of very great value. We know that these two diseases—European foul brood and American foul brood—are of bacterial origin, and we know from scientific work on other bacteria that certain methods of treatment are necessary. The result is that with this work we now have reliable methods of treatment.

The control of diseases of animals and plants by inspection methods has been the object of a great deal of thought on the part of very competent men, and inspection is really a science. Horticultural and veterinarian inspection methods are well worth study by those interested in the extermination or control of brood-diseases, and for this purpose there will be a meeting of bee-disease inspectors in this city next Monday. How much good will result from such a meeting remains to be seen, but it is certainly a worthy object. Bee-keeping must be up-to-date in its methods of disease control, and to accomplish the maximum good our inspectors must work in the greatest harmony.

In addition to the direct good resulting from scientific work, great good results from the publication of scientific results in the stimulating effect which such work has on practical methods and discussions. As an example of this I need only refer once more to the work on bee-diseases. The recent work on this subject has given us a better insight into the causes of the two forms of foul brood, yet it must be confessed that these results are of minor value, since methods of control are not changed in the least. In spite of this the announcement of results and public discussions have stimulated the persons interested in disease work, and we now are in a better position to take up the practical question of ridding ourselves of these plagues.

Over and above all this, scientific work makes better bee-keepers, in that the more a man knows about bees the better bee-keeper he is, and the better man he is. We must not lose sight of the fact that a bee-keeper has some mission in

life besides honey-production or queen-rearing, and increased knowledge adds infinitely to the pleasure of living. To add to the sum of human knowledge and to interest others in some new line of thought is fully as commendable as the production of something to tickle the palate. Let us, therefore, hail with delight any advance in our knowledge of bees.

E. F. PHILLIPS.

Mr. France—I dislike being the first to speak on a paper of so much value, which has covered a vast amount of ground; it is something that I hope, when you get the Report, you may study by sections. I have repeatedly asked for something of this nature to be done, as is expected to be done here on Monday, and I hope all will try to attend. The subject of bee-diseases will be nicely presented. I don't know that there is any definite part that I care to take up personally in discussing. It seems to me that Dr. Phillips has covered the ground.

Mr. Victor—I would like to ask if they have ever discovered that bees hear?

Dr. Phillips—I do know that bees are very sensitive, but I don't know absolutely if they hear.

Dr. Bohrer—I was once driving nails 5 or 6 feet from a hive of bees, and the first thing I knew I was covered with bees, and they must have gotten the vibration from the ground.

Mr. Rouse—Why does a swarm in the air attract other swarms?

Dr. Phillips—Bees secrete a light-colored fluid in swarming, and by this they attract each other; there is a very strong odor in the air, and the bees can smell it.

Mr. Rouse—Can they smell?

Dr. Phillips—There is no doubt that they smell.

Mr. Anderson—There is one point that meets with my convictions, and that is the improvement of stock we were discussing here yesterday—whether bees could be improved—and I believe they can in all the different strains.

J. Q. Smith—if bees can not hear, why do queens pipe, and upon their piping the other queens answer? The pipings are of different sounds. The first queen has a clear sound, and the one about to get out of the cell has a coarser voice.

Mr. Stone—I can not be made to believe that bees can not hear. Why can't

they hear as well with some of their organs as we do with our teeth?

Dr. Phillips—We don't hear with our teeth.

Mr. Stone—Some ladies and a little girl were traveling on the train with me. The little girl asked if bees could hear with their ears, and I said they had no ears. She said they hear "just the same as I do with my teeth;" and the mother of the little girl said that she knew of people that held their mouths open to hear better.

Mr. Rouse—I have worked in steam mills and if I wanted to know that the piston was working properly I would put a stick on the cylinder end, then on my teeth, and I could hear very distinctly. I don't know what caused it.

Mr. Holekamp—I don't know whether it is worth while to talk about this much more. I certainly can hear from the inside of my mouth much better than on the outside.

Dr. Bohrer—There is one thing that I wish to speak of that was mentioned last night. Dr. Phillips did not hear it; he is in charge of the Government Apiaries at Washington, and through him a number of queens were sent out to be tested. I don't think that we can recommend to him too strongly the matter of refusing to give any man a queen to test her and her progeny, unless those bees are sufficiently isolated from other bees. I would just say, "My dear sir, I will give you a queen, but you must separate your bees 12 to 15 miles, the farther the better." There is danger 12 miles, but I don't know about 15. We have had our Italian bees injured by the introduction of Cyprian blood. If these bees can be placed in the hands of careful men, that is all right. I am sorry Italian bees in different localities have not been improved. Forty years ago I found the bees better disposed than to-day. In the State of Indiana I could open a hive without a protection on my face, but I don't find it so in the State of Kansas where I live. I never go to a hive without my face and hands well protected. I wanted to speak of this to the Doctor, for I know there is harm being done by not having the bees sufficiently apart from each other.

Dr. Phillips—Perhaps I would better explain it, since the Doctor has taken exception. In the first place the Bureau of Entomology is the only organization

that is improving bees, and we are the only people that import Caucasian queens. I do know that what we have sent out are good, reliable Caucasian queens. As to putting them in isolated places, it is absolutely impossible. Any person that has tried knows that it is absolutely impossible to find places 20 miles apart to keep queens. I was asked to do something that I can not do; neither can I go to see every man that writes for queens. We can not send to people who are good queen-rearers. The distribution of queens has been stopped, and will be for all time, if I have my say about it. I don't think the Bureau has any business giving away queens, and I have recommended that it be stopped.

W. H. Laws—I want to thank Dr. Bohrer for his painstaking advice to the queen-breeders; we need the older heads to keep us straight. The Carniolans, Holy Lands and Cyprians have been imported and spread broadcast over the country, and I think that some of these races I have named have created more injury than the Caucasian race, and in some cases they have proven very valuable.

Dr. Bohrer—I want to make one more suggestion, and that is to secure some place like Kelly's Island.

Mr. Stone—As far as I am concerned, I don't feel any danger in the introduction of this bee, or any other kind of bee. I feel toward them like I do toward my farm crops. When I introduce a particular kind of potato or grain of any kind I think of them just like my bees. If I have introduced Italian bees and they are better they will eventually run out the others that are no good; they will eventually come to the top, just like oil will come to the top of water.

Mr. Anderson—I have received queens from Dr. Phillips, and I have one queen that Dr. Phillips sent me that I would not take \$50 for today. I don't consider this stock would injure the Italians.

NEXT PLACE OF MEETING.

Pres. Dadant—It is customary for those, who wish to have the place of meeting selected for next year, to make a proposal of the place, which is passed on afterwards by the Executive Committee. There has already been a place proposed, not only for next meeting, but for the following meeting, and I would

like to hear from you. Our General Manager has some correspondence on the subject.

Mr. France—The bee-keepers, especially the members of our Association, feel that the cost is great, but the good they get is great, and they would like to see this convention moved about. Invitations to different places have come in. We had to drop the invitation from Minnesota and come to Texas this year. Minnesota has renewed her invitation for the future. There will be at Jamestown, Va., next summer, and continue until the early fall, an anniversary of the Jamestown Settlement, and there are here letters from the Pennsylvania bee-keepers and their neighbors, that we meet at one of those respective places. Then there is also one from Michigan; they feel that that part of the United States is entitled to the next meeting.

Pres. Dadant—I would like to hear from the bee-keepers, if they have a place selected. The meetings have been held west of the Mississippi River, and it is time we were going East.

Mr. Coggshall—I would suggest that we go to Virginia. I think that would be a good place. We have come West a number of times, and we would like to meet in the East.

Mr. Holekamp—It seems that the Jamestown people's invitation should be accepted.

Dr. Bohrer—I don't know; there are a good many bee-keepers in Virginia, and a good many in Pennsylvania, and a good many in New York, and they should be favored with a meeting of this kind. I don't think this would be a discredit to the bee-keepers there, nor we a discredit to them. I have never been in Jamestown, Va., and I think we could have a whole lot of fun there. I attend these meetings for the fun, and I have had a good deal of it here.

Mr. York—All we can do is to recommend that the places be considered by the Committee.

Pres. Dadant—I want to impress upon your minds that it is important that we should go where there are bee-keepers, and if they are not in numbers it will make a poor meeting. Now the Norfolk, Va., people want us there, because they want us to see the town. If these bee-keepers want us, it is all right.

Mr. Holekamp—Would it not be better to let this be undecided, and give it a little more time? Maybe those Minneapolis people would come in and invite us there.

Mr. York—I don't think that we should consider an invitation from the West for next year; we should go East, as Mr. Coggshall says.

Mr. Coggshall—You might come to Philadelphia or Harrisburg.

Mr. France—This will finally have to be left with the Executive Board. Your suggestions are good, but, remember, we can not decide here. This meeting was to have been held here last year, but when the cry of yellow fever broke out in the South it seemed best to meet elsewhere. I doubt very much if the meeting will be held at Jamestown. On account of excursion rates some of the larger cities will obtain the meeting, but I am in favor of the meeting being held in the East.

Mr. Victor—I think this Association should be East of the Mississippi River, and that it be left to the discretion of the Executive Committee, without recommending any special place, except it meet east of the Mississippi River.

President—Have we a second for the motion?

Mr. Coggshall—I second the motion.

Pres. Dadant—It is the sentiment of this meeting that when you vote, that we desire the meeting held east of the Mississippi River. The motion is carried.

CAUSE AND CURE OF BEE-PARALYSIS.

“What is the cause of bee-paralysis, and what is the best cure?”

Mr. Coggshall—I have been where it is. Mr. Poppleton has it in Florida. He can not cure it; the bees die about as fast as they increase, and just about keep even.

Mr. Piper—I asked that question. Of course I think I have a cure, but I would like to know the cause of it. I use sulphur as a remedy. Some recommend putting it on top of the frames. If you do you will kill the brood, though I found putting it on the bottom-board is effective, and it does not kill the brood. But of course I know there is another cure by introducing a new queen.

Pres. Dadant—I wish to say that this is an international disease; it is known

in every country, although in cold countries it is less prevalent.

Mr. Anderson—I once thought that it was caused from certain flowers until I experimented with extracted honey from a few colonies. Those bees I carried through on the sugar syrup. In order to test the matter I extracted the honey late in the fall, from a few colonies, and allowed the bees to clean up the combs, and I used those combs to feed the other bees; that is, I fed the sugar syrup. I hived the bees and found them this way: Those bees that were carried through on the sugar syrup showed the disease equally as bad as the others.

Dr. Bohrer—with regard to paralysis, my opinion is that it affects the bees just as it does mankind, and I don't know what to attribute it to. Persons are not exempt from paralysis at any age; the infant will have it, the 5 or 10 year old boy will have it, and the old man will have it, and very often when he least expects it. In fact, an old man in my settlement boasted of his good health and yet he was taken home from prayer-meeting stricken with paralysis and died the next day. Paralysis, I say, affects the nervous system, and if we can find some kind of honey that will injure the nervous system we may get at the cause. Dr. Phillips is conducting experiments along this line. I suggest that he try it. Sulphur, it is said, has cured it by being sprinkled among the bees; but I don't know whether it has.

Mr. Rankin—The last year and a half I have been in California, and most of my work has been on bee-diseases. I am not prepared to say that it is a nervous disease, but I am prepared to say that I don't know the cause, and don't know a remedy.

Wm. Atchley—I have had a little experience along that line. I don't believe that it is catching. I have tried to see if I could not affect other colonies with it, but failed. It is no doubt caused by the queen, and I have cured it by doing away with that queen.

L. Jones—I have had some experience with paralysis of the bees. Dr. Bohrer said he attributed it to the nervous system. I think it is due to the digestive system. I read an article advising the use of sulphur—just sprinkle it over the top of the frames. I had a man working for me, and we sprinkled the

sulphur over the frames, and the next two or three days he said: "Look here, Jones, I believe you have killed every one of them." That was late in the fall, and the next spring the disease did not show up. Mr. Atchley says he does not believe it is catching. I don't know whether it is catching or not, but I would have one hive affected here, and another over there, and they would die.

A Member—I would like to call your attention to the fact that Mr. Jones has said that he sprinkled sulphur, and that he killed the bees. Is it not possible you killed the bees that would have died any way?

Mr. Jones—I don't know. After that the dying ceased, and the next spring the disease did not show up on those colonies.

Mr. Anderson—I believe my bees had that disease in Utah as well as anywhere else. At one time I went into my apiary with a Southern bee-keeper of much experience, and we noticed in the front of a colony dead bees strung out for some distance. He said: "What is the matter?" We found 3 colonies in an apiary of over 100 in just that condition. He said: "I wish you would go right to town and see if anyone is spraying trees, and ascertain what it is with." I did so, and I did not find anyone spraying. I said, "I am going to get right on a horse and go to see Mr. R., who is our county inspector." He said, "It is simply a revolution-going on, and when they get that conflict finished they will be all right." I went home and inspected my bees, and was convinced that there was a fight on. This may be a mistake, but I have never seen anything like it since.

Pres. Dadant—I think it will be necessary for me to say that this is out of the question. They are not fighting, the other bees are carrying them off. This has nothing to do with bee-paralysis, or "May Disease," as the Europeans call it, and I would like to hear more about it.

Mr. Stone—Is it not a settled fact that medical men can not cure paralysis? The reason I say this is that if it can not be cured, why try to cure the disease, but just prevent the spread of it? I know a case where there was a doctor who had a daughter that was paralyzed; he went to an osteopathist and said, "I have a daughter in the same condition that I lost one two

years ago; you can cure her." And the osteopathist did cure here.

Pres. Dadant—Now, we are off the subject again. We called up the subject of bee-paralysis. The gentleman said it was not a nervous disease, but a disease of the digestive organs, although we call it bee-paralysis.

Mr. Parsons—I have had a little observation along the line of paralysis for more than 25 years, and a short while ago I was looking over my journal, and I found a great many instances where colonies had been affected with it. It appears in colony No. 4, and the record stated that it was not thought worth moving, and some 4 to 6 weeks later it cast a swarm; it had built up sufficiently to cast a swarm and that swarm I found was entirely clear of paralysis. I had such a case, and kept that colony built up, and I had no return of the disease during the next season. It was our custom for a number of years, that when a colony was affected with what we call paralysis, I would take the hives off and fumigate them with sulphur, put the combs in a honey-house, distribute the brood, sometimes among the other colonies, and I would see no evil effects of it. But of late years, when I see a colony affected with it, I have to be more barbarous, so I simply cure it by fumigating the bees; but it is my opinion that it is not spread by an interchange of combs, and I know that it does get well, and remains well for one season. I have had in my yards colonies affected with it for 3 years, and they never would build up so as to gather any surplus honey. I have tried a good many treatments—nearly everything that I read in the bee-papers—but if I have ever found anything that was good, I don't know of it.

Pres. Dadant—Mr. France has called our attention to the fact that bee-diseases would be discussed Monday, and I will now call for the next question.

Dr. Bohrer—I want to make myself better understood. It is definitely known that there is a kind of paralysis that comes from the digestive organs.

SMOKER-FUEL:

"Are dry rags and old bones good for smoker-fuel?"

Mr. Aten—I read in a paper that some suggest old bones and dry rags for fuel.

Mr. Holekamp—I suggested dry leaves.

MOTHS AND POLLENLESS COMBS.

"Will moth-worms destroy comb where there is no pollen?"

Mr. Hyde—I dropped that question in. I thought I would like to hear some of the bee-keepers talk on it. I can give my experience in a few words. Where there is no pollen there will be no moth-worm.

Dr. Phillips—I have seen it in comb foundation.

Mr. Victor—Combs with pollen are much worse than combs without pollen.

Wm. Atchley—I wish to differ from Mr. Hyde very much, as I have had them to eat up combs with no pollen in them, and have had them to destroy solid cakes of beeswax.

Mr. Hyde—in that case, was there not some comb near by, or did they degenerate?

Wm. Atchley—Why, I don't think there was any empty comb there.

Mr. Wurth—I have had the same experience as Mr. Atchley, in regard to destroying combs with no pollen in them; they will destroy them.

Mr. Stone—My experience has been the one who asked the question. I have never known the moth to be in any of the extracting frames in my honey-house, and I have always attributed it to the fact that there was no pollen in the frames.

Mr. France—As a partial explanation of moth-worms working on wax, in many places in our State, it is the combs with apparently no pollen that are rendered into wax; and when that wax is settled, you would be surprised to see the amount of pollen in it. It is the same way with foundation. More or less pollen is in it, as in the wax. I seldom see them in new combs.

Mr. White—I want to give an experience I had last spring with the worms. During our convention in North Texas, we had a little discussion about the moth-worm. Some asked me to bring in a dry comb. As near as I could tell it was clean, smooth, nice comb, and after the convention was over I just set it back in the corner of the office, and it was left there for a few weeks; I did not move it, and I thought one day that I would put it away. The moth-worms had eaten it

up, while, according to my judgment, there was no pollen in it; if any was there it was very little, and I thought then that the particles had fallen out on the floor. I had learned a lesson. I believe worms will get into combs where there is no pollen.

Pres. Dadant—I wish to correct an impression, which I consider is a mistake, given by Mr. France, that foundation contains a great deal of pollen.

Mr. France—You are mistaken: I did not say that.

Pres. Dadant—Did you not say that melted wax contained pollen?

Mr. France—I was speaking of old wax.

Mr. Jones—I have had a good deal of experience with combs and moth-worms. I have a honey-house that I put away my combs in, and I some way favor Mr. Hyde's idea. In putting away those combs I was very careful that no pollen whatever got in, but I can not say absolutely that it did not get in there. I have noticed that if there was a little brood they are just as bad to commence on it, and when I looked over my combs the moth-worm had commenced there.

PERFECT PACKAGES FOR SHIPPING HONEY.

"Is there a way to educate the bee-keepers to use perfect packages for shipping honey."

Mr. Muth—it was I who put that question in. The majority of bee-keepers ship their honey to market in second-hand molasses barrels, and second-hand tin cans, and it is only those perfect packages from the West that come through without loss. Imperfect packages make high rates on freight, and unpleasant business relations, and if they can get down to new packages—if honey is worth anything at all, it would be a good idea to educate them a little on this point. As it is now, most of the small shippers ship their honey in a very careless manner. The bee-papers could do a whole lot more on that subject, but they don't.

Mr. Hyde—I thought that we bee-keepers in Texas were doing pretty well along that line the last few years. In 1902 and 1903 we had a good deal of trouble in the packages for shipping—a great deal of loss in the transit—and all sized cans and packages that could be thought of; but we bee-keepers of Texas saw that we needed some pack-

ages of the proper size, and not too many of them, so at College Station in our meeting this year, we passed upon it that a certain sized package be used, and we also recommended a heavier case. We put this before the railroad companies, and they accepted our specifications. We thought that was settled in Texas. I don't know what other States are doing. We have the two 60-pounds, and ten 12-pounds; and then we have two more sizes—the ten 6-pounds, and the twenty 3-pounds.

Mr. York—I agree with Mr. Muth, that the bee-papers could do more along this line, but the dealers should write something about the proper shipping packages. I am reminded of a shipment that came from a dealer in Wisconsin lately, in second-hand glucose barrels. And the drayman made the remark that the dealer was shipping in glucose! I think that ought to be stopped.

Mr. Muth—I have had some experience in shipping honey in glucose barrels; that man that shipped the honey in glucose barrels lacked experience; that is very customary. However, if you have a clean heart and clean hands you don't care what kind of barrel honey is shipped in. I do know positively that glucose barrels are the best for honey; they have 6 hoops, and they will hold 700 pounds of honey, net. If you will have 2 more hoops placed on them, and drive them tight, they will not leak, and you can ship them anywhere throughout this world. I have shipped them to New York, New Orleans, and many places in the South, and I will guarantee that they will stand shipment in the hottest weather; they are a perfect success if it is done right. But when you buy them from a grocer and soak them up with water, and then fill them with honey, the receiver is robbing you, they say.

HONEY FOR TEXAS PRODUCERS.

"What is the most profitable kind of honey for Texas bee-keepers to produce, bulk comb, section honey, or extracted?"

Mr. Hyde—Mr. President, I put that question in there. I want to hear the discussion of bulk comb honey before the Northern bee-keepers, not that we are expecting you to produce bulk comb honey because you have a *shorter* honey-

flow, and it is quite different in this part of the country. We have long seasons, and the seasons are such that we don't find it profitable to produce section-honey. A few years ago, bulk comb honey was practically unknown. But today there is scarcely a bee-keeper in the United States that has not heard of it and how it is produced. It is now the principal product of Southwest Texas, and is gaining foothold further North. The demand of the consumer for this article is rapidly growing, and is keeping far ahead of the production. There are many reasons why it is rapidly growing. The buyer feels sure that he is getting just as pure honey as if he were buying section honey; and that he is getting full weight; also that he has bought it at a less price than he could section honey. Then, he has it in a nice vessel where there is no waste nor leakage, and, when the honey is used up, he has a nice pail left that is handy in any kitchen. The above will apply to the majority of buyers. Of course, there are some that will always buy section honey because it looks nicer to them. The most delightful sight to nine-tenths of the buyers, is a nice pail of bulk comb honey, with just enough clear, sweet, extracted honey poured over it to cover it and to make it juicy. Bulk comb honey is mostly produced in the Ideal super. There are some bee-keepers that still use the full bodies for bulk comb, but we feel sure it is because they have never used the Ideal, which is lighter to handle; nearer the right amount of room to give a colony at one time; and last, but not least, easier to get rid of the bees. Take off the cover, give them a few puffs of smoke, pry up the super, bounce it on the hive lightly, and most of the bees will fall off. Then pile them up in a pile, smoke them at the bottom, and in a few minutes all of the remaining bees will leave. In that way you have no handling nor brushing of bees. The Ideal frames are handier for extracted, and if you will use a No. 17 Cowan Extractor, you can extract 4 frames at once. We pack bulk comb honey by cutting it out of the frame; then place it nicely in cans and fill the can full. Then pour in extracted honey to fill the crevices. In this way about one-third is extracted honey. Now as to the relative cost of bulk and comb

honey. You buy supers and frames for bulk comb once for all time to come. When you buy supers for sections, the sections are sold with the honey, and you have more to buy each year, and new separators every 2 or 3 years. And the shipping-cases cost more than for bulk comb. It is much more trouble and time to pack it than to pack bulk comb, and much more apt to get broken up in shipping than bulk comb. And it takes double first-class freight-rate. Bulk comb honey takes fourth-class rate, less than one-half what it takes to ship section honey. Another great advantage in producing bulk comb honey is that we can get the bees to work in the supers much earlier than we can in sections, and they can get in larger clusters to get up heat sufficient to produce wax much better and faster than when they are cut up into so many departments. All bee-keepers that have tried both kinds will readily testify that they can produce from one-half to twice as much bulk comb as they can section honey.

The convention then adjourned to meet again at 1:30 p. m.

THIRD DAY—AFTERNOON SESSION.

Pres. Dadant—As the Resolutions Committee are not yet ready, we will proceed with the Question-Box.

WAGES OF APIARIAN HIRED HELP.

“What should we pay experienced hired help in the apiary?”

Dr. Bohrer—Let Dr. Phillips answer that question.

Dr. Phillips—We never hire help except by the year, and the work is entirely different from ordinary apiaries.

Mr. Jones—In our district it is hard to get competent help, and we pay all the way from \$15 to \$30 and \$35 per month, but it is mostly at these prices; but we don't get experienced labor.

Mr. Hyde—I think the part of the country in which we live has a good deal to do with that. I could not tell you what you should pay in Colorado or any State in the North, but I hire from 2 to 4 men each year during the summer season, and I have generally paid about \$30 down to \$18 for the best experienced men; but this would not apply in North Texas, as labor is worth twice as much as it is in this part of the State; but since I have been down here

I have been paying \$30 for the best labor I get.

Mr. Victor—I have paid as high as \$40 per month for some of my help, and I don't know but that the \$40 help paid me as much as 2 men that did not know much about it. The balance of my help, I had rather they did not know much about it; but I want one experienced man, and I would like to have one man in charge of each apiary that knows what is to be done, and pay from 75 cents to \$1.00 a day for the labor, and from \$30 to \$40 for a man that knows how to do something.

Mr. Hyde—I aimed to make that explanation. The others I call helpers, and the apiaries are under the charge of that man.

Mr. France—I am a good ways from home, but experienced bee-keepers, I would infer from that; and it is a hard question, indeed, in our part of the country to get men that will work for some one else. Most of them want to work for themselves in our country, and I have to take the other side of it, and use their hands and my ability. We can not get experienced bee-keepers—they all want to work for themselves.

Dr. Bohrer—Well, you have to pay for such as you do get, don't you?

Mr. France—I have had students for several years, who attend our State Normal School, and during the vacation I can get them at reduced prices, paying about 80 cents to \$1.00 a day and their board; but if I have to go outside of that class of labor I have to pay more. The man who is living across the road from me has charge of the extracting and casing. He goes with me from one apiary to the other; he does the handling of the machinery, etc. I give him \$2.00 a day and his dinner; but he extracts about 4,000 pounds a day, and rides 6 or 8 miles a day. It has been suggested that the Information Bureau ask for such bee-keepers, so if you know of any, let it be known.

Pres. Dadant—We will now hear from the Committee on Resolutions.

The Secretary read the report as follows:

REPORT ON RESOLUTIONS.

Whereas, The National Bee-Keepers' Association, in convention assembled, has been royally received by the bee-keepers of Texas and the citizens of

San Antonio, and have been shown great favors; therefore, be it

Resolved, That the National Bee-Keepers' Association extend its thanks to the Texas Bee-Keepers' Association, and the members of the Arrangement Committee, Messrs. W. O. Victor, Udo Toepperwein, Louis H. Scholl, F. L. Aten, and W. H. Laws, for the kind reception given to the members of the National Bee-Keepers' Association; for the many favors shown them; for the splendid arrangements made; and for the Mexican Banquet which they spread so lavishly for us, the participation in which will long be remembered as a token of the generous hospitality of the bee-keepers of Texas, which we recognize as the hospitable and kind-hearted spirit which the Texans have always shown to the people coming from all parts of the world, and for which the people of this great State of Texas are known.

Resolved, That we thank Mr. Bryan Callahan, the Mayor of San Antonio, for kindly giving us the privilege of the City Hall, at the front of which he joined the Association in a picture, giving us a lasting remembrance of San Antonio and its whole-hearted Mayor.

Resolved, That we extend our thanks to the press of San Antonio, and especially to the Daily Express for sending reporters to our meeting and giving the space of its paper so generously to the interest of our Association.

Resolved, That we thank the City of San Antonio for its hospitality and the free use of the Market Hall granted to us; that we thank the Business Men's Club of San Antonio and the Traction Company for kindly offering us a trolley-car ride through the City of San Antonio and its surroundings, showing our members the sights of this ancient and historic city.

Resolved, That we thank the San Antonio International Fair Association for setting aside last Thursday as National Bee-Keepers' Day, thus honoring the vocation of bee-keeping and bringing our convention prominently before the people of this State; That we thank Messrs. Goggan Bros., for kindly lending, for the use at our hall, a fine piano and organ; That we thank Mr. J. W. A. Hansens for his beautiful piano entertainments at the intervals between our sessions; That we thank Judge T. M. Paschal for his speech, and for

the kindness towards bee-keepers shown by helping to invite us to this beautiful city.

Resolved, That we especially thank our worthy President, Mr. C. P. Dadant, for his able and just presiding over the meetings of our Association; That we renew our thanks to the General Manager of the Association, Mr. N. E. France, for the efficient work he has done in conducting the business of the Association, and for the great efforts he has made to further the interests of the members of our Association.

We also thank the Grand Central Hotel for our entertainment.

R. A. HOLEKAMP,
JAS. A. STONE,
C. C. PARSONS,
Committee on Resolutions.

Dr. Bohrer—I move that the Resolutions be adopted as read.

Mr. York—I second the motion. I might say that as the President is very modest, and his name is mentioned in the resolutions, I will put the motion. It is carried unanimously.

MAKING CERTAIN MEMBERS INELIGIBLE TO OFFICE.

Pres. Dadant—I have but little more business to perform. The National Bee-keepers' Association was organized a great many years ago by bee-keepers who were queen-breeders, dealers in bee-keepers' supplies, and editors—the men who were mostly interested in the progress of this Association. The Association has grown from 40 to 50 to several thousand; the conditions are different, the feelings are different. We find to-day that some members in the East are dissatisfied with the conditions as they are; they think that men interested in the sale of bee-supplies or the publication of journals should not be entrusted with the management of the Association. I feel that it is well to give all a chance to express themselves on the subject. We are only about 125 here, and we can not dictate, but we can, according to the Constitution, ask the membership to express themselves and amend the Constitution if they see fit. I have gone to the Committees on Resolutions and on Amendments, and we prepared some joint resolutions. We will propose them to you only to present these matters for vote. If they are ap-

proved by the whole membership they will exclude bee-supply dealers, queen-breeders and editors. I want to make you all feel entirely at liberty to vote on the subject, and I think it best to announce that I have decided to decline any further offer as President of the Association, so that you can feel that you are not voting against your President when you act upon the matter. I wish to say that Mr. H. H. Root, who is here, and his brother, E. R. Root, are entirely in accord with my views. We will give the membership a chance to amend the Constitution if they so desire.

A copy of the Resolutions prepared by the Committee on Amendments were read by Mr. J. Q. Smith, as follows:

REPORT ON AMENDMENTS.

Resolved, That the General Manager be instructed to place before the members of the National Association, the following propositions to be voted upon according to Section V., and Article 9, of the Constitution of the National Bee-Keepers' Association, concerning amendments, each proposition to be voted upon separately:

1st. Shall manufacturers, dealers, directly or indirectly interested in the sale of bee-supplies, and patentees of aparian implements, be considered eligible to office?

2d. Shall queen-breeders, or importers of queens for sale, be considered eligible to office?

3d. Shall aparian editors, associate or department editors, authors or publishers of works on bees, be considered eligible to office?

J. Q. SMITH,
W. O. VICTOR,
ROBT. A. HOLEKAMP,
C. C. PARSONS,
JAS. A. STONE,

Submitted by request. Committee.

Pres. Dadant—You have heard the report of the Committee, what will you do with it?

Dr. Bohrer—I object to the resolutions in their present form. I want another resolution offered, then vote against the whole thing. It is, that all men selling bees shall not hold office, and any man that deals in bees and honey shall not vote. It is not justice to ourselves and our officers and I am opposed to the whole thing.

Pres. Dadant—I fear that Dr. Bohrer

does not understand. We are not asking you to vote, we are asking you to permit the matter to go before the members of the Association. We do not anticipate that each one of these sections will be adopted, but I think two of them, at least, will be adopted; but I want to give each of the members a chance to vote. We want harmony, and this is the only way to get harmony. We have things our way, and the East is not satisfied; give them a chance, which they could not have without an opportunity to vote on these resolutions. It takes a notice of 45 days, in order to act upon this next year; and then leave it to their fairness as to what shall be done.

Mr. Holekamp—If I ever have been sorry since I am a member I am sorry now. It seems there is a great dissatisfaction in the East about nothing. If we exclude these men we will be left. Now, I am in the Association and get letters from our members in Missouri. All of our members either have a few dollars worth of supplies or honey to sell, or they are queen-breeders, and if these resolutions would be passed I would recommend our Association to withdraw from the National, because if we lose all of those men, who are acting under the head of dealers, they will pay little attention to our Association, and those who do the work will be left out. If these resolutions should pass I would withdraw.

Pres. Dadant—I will call on Dr. Phillips to state to us what he thinks about the matter.

Dr. Phillips—What I have to say is not to be considered my attitude in the matter. I have attended meetings in several of the Eastern States. Perhaps those who are present do not know that in several parts of the East resolutions have been passed to withdraw from the National Bee-Keepers' Association, on the ground that the body is controlled by the bee-supply dealers, editors, etc. This dissatisfaction is manifested by the withdrawal of several State associations in a body from the National Bee-Keepers' Association, so there is no doubt of it. Now, in order that this division may have an opportunity to express themselves, they should be allowed to vote upon these propositions. Especially, to be explicit in this thing, the New York Association withdrew in December, last year, from the National

Bee-Keepers' Association; several states have followed New York. Some of the individual men, who belong to the National, still retain themselves in the Association, and several of the members have withdrawn. These men have been members of the National, and many of them will become members as soon as this thing is to be voted upon and they have a chance to vote. Therefore, I am in favor of passing these resolutions in order to give them an opportunity. I think that these men should be allowed to have their say. The claim is made that these various interests that are specified control the National Bee-Keepers' Association for their own interests. These resolutions, if carried, will exclude from office the persons mentioned. At any rate, if these resolutions are approved, and it is put to a vote by the General Manager, we will have an opportunity to know what the people think about it. Pennsylvania passed a resolution to withdraw, but can not do so consistently. Pennsylvania is growing at a very rapid rate in bee-keeping affairs. If these resolutions are passed, I feel sure that this Association will not withdraw. New Jersey has withdrawn. Massachusetts is represented by a few members, but they have two societies that will join as soon as it is passed.

Pres. Dadant—According to the rules, it will be necessary for them to be passed upon and approved. It seems to me that if these people are as weak as they are represented to be, *they* should give in; if they are strong, *we* should give in. We are in a country where the minority give in to the majority, and that is what makes us great.

Dr. Bohrer—That being the case, I shall not object to their going before the National Association. I want to be at the next National meeting, and help kill the resolutions so dead that they will never be brought to the front any more.

Mr. Stone—I don't see where the fight is; I don't see anything they have to fight. Who are the directors, are they all dealers or editors?

Dr. Bohrer—They would be practically disfranchised.

Mr. Stone—I know of several, and I don't know of any that are supply dealers or editors; but I don't see anything for us to fight, and as far as that is concerned, I would feel about it like

voting out all the agricultural papers and all the implement dealers; if I voted them out I would quit farming. If the bee-supply dealers, editors, etc., were voted out I would quit bee-keeping.

Mr. Rankin—I have been through the West a good deal, in California especially, and this dissatisfaction exists there to a certain extent. There are some who think an injustice has been done, and by giving them this opportunity this will square them. If you give in and do this, the next year they will deny that they ever said it. It seems to me that it is a safe proposition, that the National can not help but win out on. I don't want this Association to divide the States, I want to help the National, because it can not win any other way. For instance, the Fruit Association is composed of fruit-growers; a dealer would not have a voice in these matters. I call attention to the fact that the members in these dissatisfied States do not represent the bee-keepers of those States, nor do they represent the bee-keepers' associations.

Mr. York—I notice in the list of officers of this Association that there are some supply-dealers. It is too bad they are in, but how did they get in? Mr. Dadant did not do any political work to get in—he was simply elected by the membership of the Association. There are only a few that are dealers or editors. I have been in office myself, but I never did anything to get in, and I certainly did not vote for myself. Of course, it is too bad I am the Acting Secretary now. Really I don't see any sense in the opposition.

Mr. Kimmey—Will the next annual meeting have a chance to pass upon it?

Pres. Dadant—The Constitution calls for a 45 days' notice. Therefore, if we do not pass this, that would be putting off a chance for these people to get a hearing, while if we put it before them to-day, they can still have another chance to vote upon it at the election. We are giving you a chance to vote upon the amendment to our Constitution. One thing I think the members are forgetting, that we are not supposed to exclude anybody from membership. I expect to remain a member, but I expect to keep out of office. I would be much disappointed if you did not favor these resolutions to-day; it would look as if we were

afraid to let them go before the Association.

Mr. Kimmey—I think that I am alone, and I don't want this amendment to the Constitution, but you want somebody to vote upon it. Now, if I understand, it gives us a chance now to approve to-day what we are to vote upon at the next annual election. I am opposed to the amendment; I don't propose to vote and approve it. I don't propose to say that I attended this meeting and approved of it. You are asking me to approve of them at this meeting. I don't believe in that kind of organization. Of course I am right. We are saying that a majority approved of it; you can not change this, the rule on Amendments in the Constitution here.

Mr. Stone—I can understand it only as Mr. Kimmey says. The Constitution says that it has to be approved at a previous meeting.

Dr. Phillips—As I understand, the whole thing is this: This Convention is not approving these things at all. The resolution says the next meeting will have an opportunity to approve this if they wish to do so. You are simply specifying business that is to come up at the next meeting. I am not approving of it. I want the membership to have an opportunity of a say. This will be held some time next year; if they approve of it, a notice will be given, and 45 days after the next Convention will be time to take this up.

Mr. Kimmey—Suppose that the next meeting occurs like this one—in November—the month of the election in 1907?

Mr. Holekamp—Very few of those here to-day will be present at this convention, if it is held in the East next year; and part of the bee-keepers will think that we approve of these amendments. Very few will understand it.

Mr. York—This, of course, is not in proper form for an amendment. To amend the Constitution we should form a new article. It has got to be put in proper form, and then the question is, Do we approve of this amendment?

Dr. Phillips—I think the President is right.

Mr. York—We are supposed to approve them at this previous meeting, else they can't go to the membership for voting.

Mr. Kimmey—We have no right to approve them.

Pres. Dadant—We have the right to instruct the General Manager to send it out to the whole membership.

Mr. Holekamp—I move that this whole thing be put on the table.

Dr. Bohrer—I second the motion.

Pres. Dadant—All in favor of this motion, say "Aye." The motion is carried.

GETTING A LARGER CONVENTION ATTENDANCE.

"While endeavoring to increase the membership to the National Bee-Keepers' Association, would it not be well to try to touch the tariff on passenger transportation, whereby more members might be enabled to attend the National Bee-Keepers' Convention, and see new flowers bloom, bees' tongues grow longer, and, indeed, see honey grow sweeter? I believe such a move would bring many into the National, who to-day are non-members."

Mr. Holekamp—A cheaper rate can easily be obtained if there are enough bee-keepers attending a meeting.

Mr. Kimmey—You can always obtain a special rate by going before the proper authorities, and by getting 100 members.

Mr. Anderson—Now, then, right there is the point. Some of us can not even get a return ticket, while some got great reductions. I believe this thing should be taken up in the proper way, and we will all be treated right. There are a great many sorrowful-looking faces back our way, just simply because the railroad companies said they knew nothing about our convention. Some of them got so disgusted that they thought that if the Association would not look out for us so as to get rates, we were not wanted, and we will drop out; but if you swell a fellow's pocket a little, and they see they are going to get a reduced rate, it will be an inducement to bring them in.

Mr. Kimmey—I move that the General Manager be instructed to make arrangements with the different Passenger Associations for reduced rates to and from all annual meetings hereafter.

Dr. Bohrer—I second the motion.

The motion as put was unanimously carried.

Mr. France—I have tried to secure these rates so far as my influence would

go. I believe that the rates from the different places should be considered. What rate can we secure if we go there, and it is almost depends upon the rate. Now we would not have met in St. Louis two years ago if it had not been for the World's Fair and the cheap rates; and then we promised to come here last year, and the railroads granted a special rate, but the yellow fever broke out. Then the question was, Where can we go? and the nearest to it was the Chicago International Live Stock Show, in December; then we came here this year. I have been trying to do what I could for you in that line.

Mr. Stone—I would ask Mr. France if these rates can not be gotten every two weeks. We can secure these rates the first and third Tuesdays every month, just as we did this time.

Mr. France—Yes, sir; there was a definite promise in favor of Texas, and they had been put off, and were getting tired of that.

Mr. Anderson—I was angry about this, but I came on, anyhow, and I was going to find out if other bee-keepers were treated the same way. The first thing I went into the Santa Fe office and asked if there were any reduced rates to Texas, and the agent said he did not know of any just now. He said, "What part of Texas do you want to go to?" and I said, "San Antonio." He looked at his book and said, "Beginning on the 4th the National Bee-Keepers' Association is there, and I will give you the single round-trip plus 50 cents, good until the 15th." Now, see, the National Bee-Keepers' Association had something to do with it there. I believe that Mr. France has done all that he could; but let's better it.

Mr. Holekamp—There is a blank on which these people can secure rates. If we have enough to go, there is no trouble about securing rates.

Pres. Dadant—I think I can throw a little light upon this. I received several letters from railroad companies. All the meetings of the associations are announced in a special sheet published specially to give notice of all the association meetings in the United States. Ours was published in that sheet, and I received two letters from them; all they wanted were the delegates' names. I have tried this in getting rates. Rates

are promised if you have 100 delegates; if you have 99 you can not get them. So you see the railroads do know something about us. The superintendent wrote to me asking the names of our members, but they wanted a large crowd to go; they are not giving these rates out of kindness, it is simply to make money. If you can assure them a profit they will give us rates; otherwise they will not.

Pres. Dadant—There are two papers which have not been received, one by Mr. R. F. Holtermann, of Ontario, Canada, on "The Difference Between Ripening and Evaporating Nectar;" and one by Mr. C. A. Hatch, of Wisconsin, who says he would prefer to re-prepare his paper and then send it in for publication, if admissible. Now, if there is no objection we will insert them in the published report. Under those conditions I think we are through with the business. I have been asked to state that the Bee-Disease Inspectors meet here on Monday, and I hope that every member will attend. Dr. Phillips and Dr. White will both be present.

Mr. France—Some have asked me if there will be anything except lectures in regard to diseases. Yes, there will be demonstrations and samples of foul brood. It is important that you stay.

Dr. Phillips—I wish to say that the inspectors have been meeting together, and have been studying up on these matters. It therefore behooves the inspectors to get together and learn all they can. For that reason, Mr. France, Mr. Hutchinson, and myself, met in Milwaukee to talk over this subject, and we decided to call a meeting of all the inspectors we could reach, and the place we finally decided upon was San Antonio. We are going to have quite a number of inspectors here, and the main thing is, the proceedings will be published, and the papers that are read will be available for the persons that are unable to attend. Dr. White, who has done the best work, will be here Monday for the meeting, prepared to give a demonstration of the work that has been done. My part will be that of reviewing or pointing out where mistakes have been made. I have in my possession papers from two or three inspectors. I will also have present copies of the Foul Brood Laws of the United States and the members will inspect them and pass resolutions; and

many things will come up for discussion.

Pres. Dadant—The Secretary says there are two questions left. We will hear them.

AMERICAN BREEDERS' ASSOCIATION.

"Should not the National Bee-Keepers' Association become a member of the American Breeders' Association?"

Dr. Phillips—I suggested this for this reason: Last year we had something to say about the American Breeders' Association. That Association is composed of men in all lines of breeding work, and the object is to discuss the methods that they employ in improving the plant or animal on which they are working. The laws that are behind breeding are perhaps few in number; there are certain underlying principles to be considered. For that reason I am very anxious that the bee-keepers, who are interested in the breeder's side of the industry, should become more interested. The bee-keepers can aid in this way, or express their approval, by becoming a member, by paying the annual dues of \$1.00 per year, for the whole National Bee-Keepers' Association.

Mr. Kimmey—I move that the General Manager be instructed to apply for membership.

Pres. Dadant—It is moved and seconded that the General Manager be instructed to apply for membership in the American Breeders' Association by paying the fee. All in favor of this say, "Aye."

The motion was carried.

EFFECT OF THE NATIONAL PURE FOOD BILL.

"What effect has the passage of Hepburn Pure Food Bill on the sale of adulterated honey?"

Pres. Dadant—I have had some particular experience along that line. We have several wholesale grocers, and they have been selling adulterated honey. I went to one dealer and told him that we wanted pure honey handled. He said, "I have had to handle adulterated honey, because everybody does it, but I don't like to do it. We are glad of that law and we will be glad to handle your honey."

MISCELLANEOUS.

Mr. York—I want to refer again to the amendment proposed this afternoon. I was Secretary of the Los Angeles Convention, and Mr. W. F. Marks was then Chairman of the Committee on Amendments. I remember at that time that the convention approved of the amendment, so I think that we have done the proper thing with this amendment this afternoon, because I am sure that a majority of those present would not approve of the amendment proposed. The Constitution is very plain, and that was the way it was proposed to amend it in Los Angeles, which was perfectly proper.

A Member—Before we adjourn, there is one other business proposition. With the kindness of the Department of Agriculture to come here and hold an Inspectors' Meeting, there is no provision for the publication and report of what is said and done next Monday, so that we could all get copies of the same. There is no provision, as I understand, for a reporter to take the proceedings. It will therefore be necessary for us to furnish a reporter. The reporter we have engaged for the National Bee-Keepers' Association, if I mistake not, is willing to stay over and report for this meeting, but that is independent of this Convention, and if we could raise the amount by subscription I would gladly see that done; because the information we will obtain on bee-diseases next Monday is worth a big contribution.

Mr. Victor—I wish to say that the Texas Bee-Keepers' Association will donate the necessary amount. I wish also to state this about the bouquet that has been presented to Dr. Bohrer: At the first session he said he would like to shake hands with him, if there were a Confederate soldier here. This bouquet was given as a token of regard from the South for the sentiments expressed by Dr. Bohrer.

Dr. Bohrer—The language of the flowers is peculiar, and no one has ever been able to express them fully. At funerals, when our friends lie down and die and leave us, we put a bouquet in their hands; at the wedding feast the women and the bride are decorated with flowers. Flowers carry with them everything that speaks of refinement, of sympathy, and of purity. Nothing perhaps of the three kingdoms carry with them such loud expressions as flow-

ers. We have made it a custom up North, when we decorate the graves of the Federal Soldiers, not to forget the Confederates. I don't want to say any more. [Dr. Bohrer as well as many others were almost in tears at this point.]

Pres. Dadant—If there is no more business, I wish to thank the members for their kindness and attention during the sessions of this Convention.

Dr. Bohrer—I move that we adjourn.

WHAT CAN THE NATIONAL DO FOR ITS MEMBERS?

I am not among the number who think the National Bee-Keepers' Association should take up the bee-supply business, neither do I think it should go into the direct selling and handling of honey; this is too large a country for that, the interests of each section are so varied, the grades of honey are so various, that mountains of difficulty loom up at all points; while they may not be



President L. A. ASPINWALL.

Mr. Parsons—I second the motion.

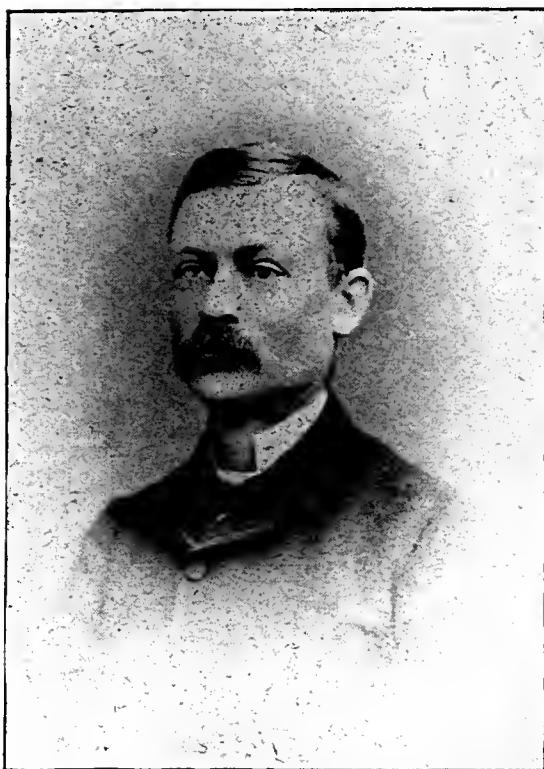
The motion was put, and carried, thus adjourning to meet at the call of the Executive Committee in 1907.

The following paper by C. A. Hatch, of Richland Center, Wis., was not read at the convention, as Mr. Hatch was not then fully prepared on it, hence there was no discussion:

insurmountable, the difficulties are too many to think of with comfort. So let us look at things yet undone which are less complicated.

To reach the highest success there must be the best feeling and greatest confidence among members. Loyalty should be the watchword of the membership—this breeds confidence, and confidence gives self-respect. There is no place for jealousy or suspicion in a successful society.

It should be a sort of "clearing-house" for its members, of ideas as well



C. A. HATCH.

as actual products. Not that the products of the membership should be actually handled, but members should be placed in such close touch with each other that each would know what all are doing in the way of producing and selling honey and wax; this leaves no place for secrets.

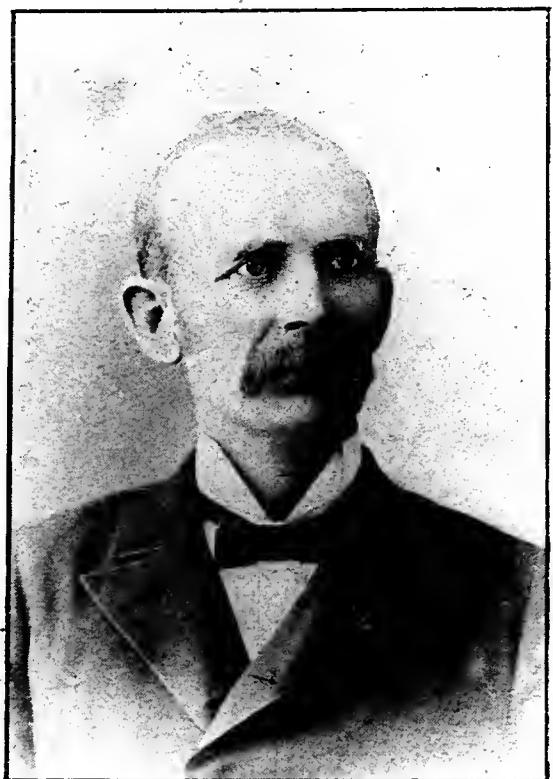
The Secretary or General Manager should be able at any time to furnish to members or dealers the exact amount of bee-products held by each member, and at what price it could be put on the cars. If a dealer ordered a certain amount of honey of the General Manager, he should be able to fill it from the nearest member having that grade of goods to sell, to the mutual benefit of both producer and dealer.

He who thinks the National can dictate prices and "hold up" the consumer for an advance, is harboring a delusion, besides fostering a principle that has given us over to the power of the trusts.

That the producer does not get all he is entitled to is self-evident, but he has, as a rule, no one to blame but himself;

for no sooner does a large crop come to him, and his neighbors, than they all rush it into the nearest market, with the result that they each compete with the other, and the market goes to smash, and freight and commission consume what ought to have been a fair compensation.

The sooner we learn that the interests of dealer and producer require that each should be fully informed as to crop of each year, the better; and do not for a moment imagine you can get ahead of the dealer and get inside information before he does; he has correspondents in every neighborhood that keep him informed, and it remains to inform ourselves as well, and be prepared to act intelligently, thereby will we be able to ask for our crop what it is worth, with the certainty that we will get it. The mere fact that you are a member of the great National Bee-Keepers' Association is not going to help you the least; help can come only from facts and statistics which it can furnish, and if you would get benefit from these you must



Vice-President GEO. E. HILTON.

be prompt to do your share toward making them full and complete; give and you shall receive, withhold, and what

you seem to have shall be taken away.

Some seem to think that the mere fact that you are a member is going to give you an advantage in the market for supplies that others have not. If you have that kind of a bee in your hat, get it out quickly, for nothing is further from the facts. No can company or supply dealer cares one cent how many societies you belong to; all he cares is how many cans you want and your ability to pay for them. I know that something to rather disprove this last assertion has been sent to members, yet I am willing to stand by it, for there are facts to back it up.

be helped is by furnishing them information as to reliability of commission men and dealers in the cities. One correspondent at each distributing center could easily do this, and save much loss and trouble. With fair knowledge as to amount of honey produced each year, and a knowledge as to whom to deal with, producers can stand some show of getting reasonable prices.

C. A. HATCH.

The following paper, by Mr. R. F. Holtermann, of Brantford, Ont., was received too late to be read at the Convention.



Secretary JAS. A. GREEN.

If you and your neighbors can jointly use a carload of supplies of any kind, then, and then only, can you demand reduction from the dealer; and you are working against your own interest if you do not avail yourselves of the discount on price and saving on freight-rates. If you think some supply dealer is building up a trust, deal with some other one; there are plenty of factories in this broad land of ours, and the supply dealer can not live without patronage; on the other hand, neither can we as producers get along without supply dealers. Do not let us waste strength kicking one another, for each is dependent on the other.

Another way in which members can

THE DIFFERENCE BETWEEN RIPENING NECTAR IN THE HIVE AND EVAPORAT- ING IT ARTIFICIALLY

The subject which has been assigned to me has, I am sure, much about it as yet unknown, and yet probably of much practical value to the bee-keeper in making him put a better article upon the market, and assisting him in the sale of it; and to the consumer in showing him wherein lies, in part at least, the superiority of honey to all other sweets, fats and starchy products, as a food.

The aparian body will contradict itself in the value of honey as long as

some of its members claim what has been proven as to the nature of honey, and other members claim that honey or nectar taken from the hive freshly gathered and evaporated outside of the hive is the equal of that which has gone through all the stages in the hive until capped and fully evaporated to the consistency of well-ripened honey.



N. E. FRANCE,
Treasurer and General Manager.

The obvious superiority of honey over many other products as a food, lies in part in its source—fragrant blossoms. It is gathered by the most fastidious and cleanly insect known; this insect storing the honey, and in the process of ripening the nectar, in the combs and moving it about from cell to cell, inverting the saccharine substance and making in reality a pre-digested food. Such foods are highly prized, and in other lines very high prices must be paid for them. Nor is this all. Honey is not only a sweet, but it contains an essential oil, imparting to it an aroma peculiar to the source from which it springs; this with our commercial honey, pleasing the palate and bringing into beneficial action the organs of digestion and assimila-

tion. That the honey in the process of production before explained, is inverted, has been proven, the latest evidence being by Prof. Phillips, of the Washington Apiarian Experimental Station.

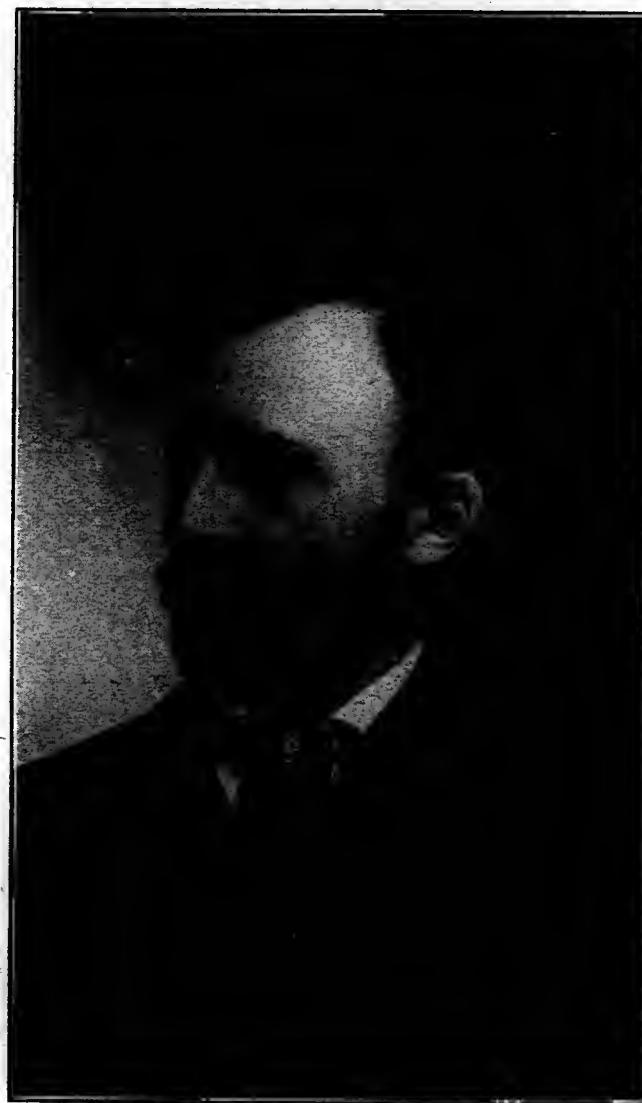
We know that during the process of evaporating nectar outside of the hive, no honey will be inverted. We can therefore not contend that the product of this artificial ripening is as valuable as that of the more natural process. Some may not be willing—more, I know some are not willing—to recognize this inversion by the bee. The question of the fact is not dependent upon such a recognition any more than that the fact that my friend will not recognize me proves that I am non-existent.

FORMIC ACID.

That the percentage of formic acid varies in various honeys, we know. Some 8 years ago, when conducting a series of experiments for the Ontario Government, I discovered this, and the experiment has since been verified in Europe. Finding that when bees worked on buckwheat the sting was more painful, I thought that the percentage of formic acid in buckwheat honey might be greater than in white honey. A sample of clover and also of buckwheat honey was analyzed, and it was found in the sample sent that buckwheat had about twice as much formic acid as clover honey. I have since realized that this experiment was very crude, and in this direction (formic acid) there is still open a wide field for research. We do not yet know if the percentage of formic acid in honey varies in varieties of bees. That is, do Italian, black, Cyprian, Caucasian, etc., show a marked difference in this respect? If not, do individual colonies show the difference? Does honey gathered early have less formic acid than honey gathered late, irrespective of the source? If so, may it be because honey gathered early has longer time and more favorable conditions under which it can thicken and be less liable to ferment than that gathered later? At what stage, or stages, of ripening is the formic acid put in by the bees, and how? Is it added to as are the secretions which invert the honey, or is it added through the organ of defence? I am not afraid to uphold or condemn

the "sting trowel theory." In part it may be correct. Is this formic acid valuable, and do the bees keep adding it as it is being ripened? If so, nectar evaporated outside of the hive will vary in this respect. I would guess that formic acid is added to the nectar in its early stages of evaporation, to prevent fermentation, for without

larvæ, to prevent the spread of diseases peculiar to bees. The constitutional strength of the bee, the vigor of the bacillus, and the percentage of formic acid in the honey, may all have a bearing upon the spread of disease in the hive, and may be a factor in the degree of immunity from diseases of certain strains of bees. When the above points



R. F. HOLTERMANN.

the formic acid in warm and muggy weather, the condition would be favorable to start fermentation, the temperature of the hive never being high enough to destroy the germs of fermentation floating in the atmosphere passed through the hive.

The formic acid may also be there to disinfect the honey to be fed to the

are answered, we can better answer what is the difference between ripening nectar in the hive and evaporating it artificially.

AROMA.

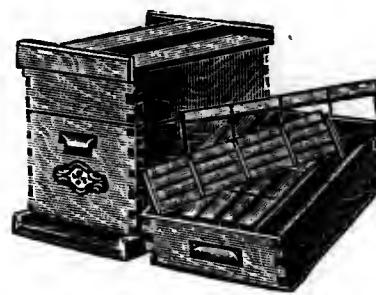
As to the difference in the aroma or flavor, it may be that the formic acid in combination with the essential oil,

causes the flavor or aroma to undergo a change. This I do not know. The milder honey, however, changes its flavor less than more pronounced flavors in the process of ripening. It may be that if there is no essential oil, the formic acid would not have an oil to combine with, and so the change would not take place. We know that the odor in the apiary, especially marked at night, during the gathering season must be at the sacrifice of something. Is this odor not a combination of the peculiar odor of the hive in union with the odor from the nectar? If so, no similar artificial condition can be created. This odor is certainly not similar to that from a ripening tank of nectar.

To illustrate the change: The past summer we had 240 colonies located in an apiary in the neighborhood of a species of mint. I tasted a peculiarly strong flavored honey in the hive, but could not discover its source, until I traced through, first capped and then uncapped honey, back until I tasted the nectar shaken from the comb, and then the smell of the mint blossom. All formed a perfect chain when there appeared to be no connection in flavor between the ripe honey and its fresh nectar. Several of my apicultural students remarked the same thing.

In closing, let me say that we as bee-keepers' do not realize how much there is yet to learn in our profession. We do not realize how great the practical need of learning is, and how little we unitedly are doing to have this work done. The United States is to be congratulated upon the work begun at Washington, D. C. Let us do everything to encourage good work, and condemn in all these positions the appointment of inefficient men. Let us be careful not to demand definite results too rapidly. In research work I rather admire the methods of the best European countries, where they study, and study, and work, upon a question, confirming results again and again before much is given to the public. I would also suggest that these experimental stations, as far as possible, seek the co-operation and corroboration of our best practical bee-keepers' in their own individual apiaries. A committee even (advisedly) to advise us to work, and discuss all the points or conditions which must be alike, in order to compare the merits of points not alike, should be of very great value, and such a suggestion from the National Association would surely have its weight, and might—in fact, should—aid the work greatly.

R. F. HOLTERMANN.



PROCEEDINGS
 —OF THE—
Sixteenth Annual Session
 —OF THE—
Chicago-Northwestern Bee-Keepers' Association
 Held in the Bush Temple of Music, Chicago, Ill.,
 —ON—
WEDNESDAY AND THURSDAY, DEC. 5 and 6, 1906



The sixteenth annual meeting of the Chicago-Northwestern Bee-Keepers' Association was held in Chicago Dec. 5 and 6, 1906, with President George W. York in the chair.

The convention was called to order at 10:30 a. m., and R. L. Taylor, of Michigan offered the following prayer:

Our Heavenly Father, we thank Thee for the blessings which Thou hast given us to enjoy. We thank Thee that Thou hast preserved our lives for another year; that Thou hast given us a good measure of health and strength. We thank Thee for all the wonderful blessings which Thou hast showered upon us. And now we pray Thy blessing upon us as we are met together to discuss one of the subjects which Thou hast given us to employ our thoughts and our labors. We pray that Thou wilt bless us as an association; that Thou wilt direct us aright; that Thou wilt keep us from wrong; that Thou wilt cultivate among us a friendly, brotherly feeling. We pray Thee to guide us in all our doings while we are here together at these sessions; that Thou wilt direct our thoughts; that Thou wilt enable us to walk aright; and we pray that Thou wilt continue to be with us during our lives; that Thou wilt bless us and keep us from wrong and make us like Thy Son, Jesus Christ, in whose name we ask it. Amen.

As usual at the opening of the session of this convention, the President introduced all present by calling their names

and requesting them to rise, so that all might the more easily become known.

The minutes of the previous meeting were read and approved.

The Treasurer read his report, showing a balance on hand of \$22.88.

On motion, the chairman was directed to appoint a committee of three to audit the Treasurer's books, and Messrs. Kimmey, Chapman and Wheeler were appointed.

Pres. York—We will now have a recess for a few minutes for the payment of dues.

After the call to order again, the question-box was taken up, as follows:

EXPERIENCE WITH CAUCASIAN BEES.

"Will any person having Caucasian bees give his experience?"

E. T. Abbott—A man sent me a queen, and she died on the hive before we got her in.

A. A. Clarke—I have had some little experience, perhaps not worth mentioning, but as I did not hear anybody else reply I thought I would speak. I had 2 Caucasian queens the past season, and I have bred nearly 300 queens from them and probably sent out 150 of those queens to different States, on their own merits. I could not recommend them, because I had not had any experience with them; but I found out that they were excessive swarmers, and not better honey-gatherers than a very poor Italian. It would probably be safe to say that they showed great tendency to

start queen-cells when they had sufficient room for all the storage capacity. I found that they were excellent comb-honey-builders, as far as they went, but the record in amount of pounds was away behind the common German bee and the Italian, and a number of bee-keepers could not distinguish them from the common bee. But I do not think I have really had them long enough to say whether that is the natural tendency or not. I think it is hardly a fair estimate. I am wintering 75 of them, selected ones, and I intend to try them.

W. G. Reynolds—I haven't had experience myself, but a neighbor of mine has. A year ago last summer he bought some. He was away one day and a swarm got out, and his wife attempted to hive them, or to get them in, and they got under her veil and she was laid up for a week; and during the time she was in bed, between life and death, her sister attempted to hive another swarm, and she had the same experience.

Wm. M. Whitney—I have one colony of Caucasian bees, but have not had them long enough to form any definite opinion as to what they may be worth. I have handled them a good deal and they seem very gentle. They are what are called a "grey Caucasian." I have handled them perhaps a half-dozen times without smoke and without veil. They go over the frames with their wings about half raised, as if they were going to fly, but still they are very gentle and easy to control. I have been told by some individuals, who had had considerable experience, that they would almost close up the entrance with propolis—they just daub everything up—but that has not been my observation. I don't know what they might do. I simply got mine for the purpose of experimenting a little, to know for myself what to make of them.

CAUSE OF SWARMING IMPULSE.

"What is the chief cause of the swarming impulse?"

F. Wilcox—I venture the opinion that that question is prompted by the statement made that Caucasians show a tendency to swarming, to building queen-cells, and the question naturally arises, Is that tendency a hereditary tendency? Is one race or strain of bees more inclined to swarm than another, or is it other conditions, such as atmosphere, or differences of the season? There are

various influences that tend to promote swarming, but the question is, What is the chief influence? And I wonder whether the tendency to swarming is anything against the Caucasians or not, whether it is hereditary or not.

H. F. Moore—It occurs to me that the chief cause here is the instinct implanted in man, and all animal creation from man down, to multiply and people the earth. That is the reason why bees swarm, and it is absolutely hopeless to attempt ever to get rid of it. The question is, Is it desirable to get rid of it?

Mr. Wilcox—The question is, Is it greater in one race than another?

Dr. C. C. Miller—if it is not getting away from the subject, I would like to reply to Mr. Moore's remarks, that however undesirable it may be for him to try to get rid of the swarming impulse, there are a whole lot of us that would give just about half our lives if we could get rid of the swarming impulse. It would take off half of the trouble we have in bee-keeping. I, for one, have been trying to find out for a good many years what is down at the bottom of it, that is, the answer to that question. I don't know what it is, by any means. I think possibly there may be a good deal of reason in the answer that is given by some, that the prime cause of swarming, or the basic cause, at least, is the accumulation in the nurse-bees of a certain amount of the chyle food they have prepared, and they become, as you might term it, in that way clogged with that, and then comes the swarming fever. Now if Mr. Moore is correct, of course we don't care anything about that. I am sure that Mr. Moore is "away off." In my case, I would give a whole lot to know what makes bees swarm, and put a percent on top of that to know how to stop the swarming.

Mr. Moore—Produce extracted honey.

E. K. Meredith—I suppose that the impulse of swarming is in the relation, to a certain extent, of birds laying eggs. It is just simply a matter of nature propagating or keeping up the race of bees, just the same as any other bird or animal does. That is my answer to the question of why bees swarm.

Mr. Abbott—I think about 15 or 20 years ago I wrote some articles for the American Bee Journal, that seemed to have a good deal of heresy in them, in the minds of some of our brethren, among them Dr. Miller; and I think I

stated in one of those articles that it was just as natural to swarm as it was to live, and the swarming impulse was what made bees valuable. I have never gotten away from that idea yet.

Dr. Miller—Never ceased to be a heretic!

Mr. Abbott—The bees that swarm are the bees that do the work. They have the energy and vigor and enthusiasm of all young life. They have the enthusiasm of a couple that is just founding a new home, and planting shrubs and flowers and things about it, endeavoring to develop and make it what a home ought to be. Now bees do the same thing, and are influenced by the same impulses, divine in their nature, planted in their being when the Almighty gave them existence, and it is just as futile for a man to attempt to breed it out as it would be to attempt to stop the sun in its course. It lies in the very foundation of life itself. The first germ of life that existed had in it the impulse of development and division, separation, and so it has gone on amplifying and increasing until we have today the endless germs that people this earth, and the planets that "people" the heavens above, and that will go on forever. It is all right to make the best of swarming, but bees will always swarm in spite of you.

Mr. Whitney—The question is, What is the chief cause of swarming?

Mr. Abbott—The swarming impulse.

Mr. Whitney—I think Mr. Abbott has hit the nail pretty nearly on the head; but we notice that in some seasons the swarming impulse is a great deal stronger than it is in others, and it seems to me one of the chief reasons for that has been a close, damp atmosphere, with not quite room enough, or ventilation enough, in the hive. Now I think that if one can anticipate the weather, and will give the bees sufficient room, and good ventilation, one can very often break up swarming.

W. C. Lyman—I have experimented more or less along this line, and I find that if you could eliminate from the colony of bees, that is, from the hive of bees, the young bees—those just hatching, and so on,—the remainder of the colony will seldom swarm, and there are ways that that can be done. Perhaps I will show some of the ways tomorrow—ways in which I have done that.

Dr. Miller—If it be true that the

swarming fever is a thing that gives life—maybe I don't quote exactly—but if it is the grand opportunity, that there is where you get the bees that will do the work, the ones that swarm the most, then we want to encourage swarming, and we want to have a whole lot of other swarms and all such things as that. Now I don't believe a word of it, that it is an instinct that is in all of them, and they will all swarm anyhow, and you can't do anything about it. That is all nonsense. There are plenty of men here today that know that there are certain bees that will swarm more than others. Take the Carniolan and compare them with other bees, and there is a difference, and in any kind of bees, whether Italians or blacks or what they are, there are certain strains that will swarm more than others. I have tried for a good many years to do a little in the line of breeding from those least inclined to swarm. It may be entirely true, and I am not sure but it is. I am a little afraid Mr. Abbott is right when he says you never can get the instinct out entirely, but I believe you can get a whole lot of it out. I know that the past summer—it was a year of failure with me, but I think all will bear me witness that in years of failure there is often as much swarming as in good years—sometimes in good years, when the bees get thoroughly interested in storing honey, we have very little swarming. This year I know of but one colony amongst my bees that made any preparation whatever for swarming. I am just as sincere as I can be in the belief that my attempting to breed from those least inclined to swarm made a difference. I don't know how much difference. I believe, though, that it has made a real difference, and that I have less swarming today because I have tried to breed from those bees that did not swarm. If any of the rest of you want swarming, it is all right. I don't want swarming; none of it in mine, if I can get along without it. I know it used to be, and is today, customary to talk about the enthusiasm there is in seeing the bees flying around, and all that sort of thing. It makes me sick when I see them come out.

R. L. Taylor—How poor a season, I would like to ask, did you have?

Dr. Miller—It was so poor a season that I think I did not get more than 2 pounds of surplus honey and it was not so bad as it might have been, because

the last of the season the bees got a good amount of fall honey for the winter stores.

Mr. Taylor—Would you really like to have us believe that your bees did not swarm because you have been breeding for non-swarming, rather than they did not swarm because there was no honey coming in?

Dr. Miller—I doesn't matter so much what I believe about that—

Mr. Taylor—No; I don't ask you what *you* believe, but I ask you what you would have *us* believe.

Dr. Miller—You asked me what I think. I am going to give you one or two facts, and you can believe just what you like. I spoke of what was the fact this year. Now years ago I had just the same kind of season that I had this, and I had ten times as much swarming as I had this year.

Mr. Taylor—Yes. Do bees ever do anything twice alike?

Dr. Miller—No; not mine.

Mr. Taylor—Well!

Mr. Lyman—Dr. Miller referred, I think, to the nurse-bees. I would like to ask, when a swarm issues naturally, where will you find the majority of the nurse-bees—going with the swarm or remaining in the hive?

Dr. Miller—I have been taught that it is a mixture, that all sorts go and all sorts stay. I think I have seen the statement that young bees go, and sometimes the statement that old bees go. I think that the general concensus of opinion is that it is a mixed lot. There are field-bees that go with the swarm, and here are nurse-bees that go with the swarm—all sorts.

Mr. Taylor—I have seen a good deal of swarming, and I think that pretty much all the bees that can fly in the hive—a large portion of them, that can fly and get out in time to go with the swarm—go, and often bees come out that can not fly, and try to get away and can not, because they are too young. If the nurse-bees can fly, then the nurse-bees go with the swarm, and if they can not—if they are too young to fly—of course they have to stay behind.

Mr. Meredith—From 103 colonies of bees last spring I had 2 swarms. Three years ago from 48 colonies I had possibly 60 swarms, and I have come to the conclusion that bees look a little farther ahead for what they expect to be than possibly other animals, and I should judge, from what I have seen, that un-

less the conditions are favorable for a honey-flow, the bees will proceed to swarm.

J. C. Wheeler—I was just recalling a thing that happened, and wondering how long ago I remembered the subject and these very same arguments used. I believe it was 15 or 16 years ago, in this very same convention, the very same question came up, and the very same answers were made. I believe Dr. Miller made very nearly the same speech and I was wondering, in 15 years how much advancement had been made. Probably every year we have discussed this question, and I doubt if we have any of us advanced one step along the line of keeping bees from swarming, or eliminating the swarming instinct. I may be mistaken.

F. L. Kimmey—I am young in the business, and I would like to have you continue repeating the things that were said before I was here. While it is true, as Mr. Wheeler says, we do not gain fast—we sometimes say there is nothing new under the sun—yet what we do gain comes in this way, and I, for one, vote to keep it up. Two years ago—and when I mention this I hope we won't fall into the error of thinking that Dr. Miller has produced bees that do not swarm because they did not swarm this year. The year preceding this there were few swarms; then they swarmed oftener than I had colonies, that is, some of them swarmed twice and some three times. I did all I could to prevent it. This year I did not see a single swarm, with double the number of colonies, until I stopped watching for them. There seemed to be something in the season. I did not see a single swarm until away along in the month of August I discovered one hanging on a tree, and after that I found another, and away late, about Oct. 5, I found a swarm hanging on a tree. I mention this fact to show that there must have been something in the season rather than in the bees, for I had done nothing whatever to produce a race of bees that would be non-swarming. Yet I believe, and I sincerely hope, that Dr. Miller is right, that you can produce a strain of bees that will be non-swarming; and I think from the success that has been achieved in other lines of race-breeding, that we can do something in that direction.

W. B. Chapman—I would like to say in relation to the subject under discuss-

sion, that I have kept bees for 17 years. I started with one colony; never have gotten any outside blood in my apiary, and from that one colony I now have, of the original strain, 11 colonies of bees. I have never had an afterswarm. I have been in a location where we always had plenty of honey. The least amount of honey that I ever had was 30 pounds to the colony; the most was 70 pounds; and right here in Cook County. I believe that I have a strain of bees that are considerably non-swarming. From what I have heard of afterswarms and such matters here in convention, I have always considered that I must have been very fortunate to have had a non-swarming strain of bees to start with.

Mr. Wilcox—I asked that question, because I wanted to know, and not because I knew as much as the rest; but I have studied it for 20 years. I know something about it, and I agree pretty nearly with Dr. Miller, that there is a little in the hereditary tendency, but not enough to rely upon it altogether; that it is possible that the Caucasians may be more inclined to swarm than some other races or strains, but, after all, there is evidence on both sides. I have noticed, some seasons, when I produced comb honey, in examining my hives, that the colonies all started queen-cells at about the same date. I have gone through my apiary and found almost every colony preparing to swarm at the same time. Now the question was, whether they contemplated the season and what was coming, and prepared for it, or what would cause them all to take that notion at the same time. I then reached the conclusion it was the hatching period, and the prospect of a honey-flow, or something of that kind. There is a good deal there worth considering. I have, however, had some colonies that did not swarm, never swarmed, and I don't know whether I could make them swarm or not. I never tried to. But they didn't. They were prolific and good honey-producers. I followed the queen up in one particular case. I had an excellent crop of honey and the bees never swarmed, and her progeny—as I reared queens from them—was not inclined to swarm. So there is something in that hereditary tendency, but how much I would not care to say. I want to know more about it. I know that I can prevent an apiary from excessive swarming, in

comb or extracted honey, by giving them surplus room and good ventilation a little before they are ready for that—a little too soon rather than too late—and giving them shade, plenty of it, will check the swarming impulse very much.

Mr. Meredith—While bees may be bred to a certain extent non-swarming, possibly the same relation may apply to bees as does to poultry. The Mediterranean class, including Leghorns, as we usually keep them, are non-sitters, but if they have their own way, where they can go out into the brush and lay their eggs, I think that they will have the sitting fever the same as any other breed of chickens; and I think, possibly, that same rule might apply to bees that if they get back to their natural rock cavities, or logs, they will swarm just the same as ever.

USING QUILTS OVER FRAMES.

"Are quilts worth enough to bother with?"

Mr. Wilcox—What do they mean by "quilts?"

Mr. Chapman—Covering for the frames in the hive.

Mr. Wilcox—An enameled cloth is not a quilt for covering the frames. That is used for another purpose. A quilt is used to prevent the heat from escaping at the top, and an enameled cloth is used to prevent the cover from sticking. I used to use the enameled cloth, and I have tried a good many times to use a board, but it causes me more trouble than it is worth, so I continue to use the enameled cloth.

Dr. Miller—Allow me to suggest that there are three alternatives in that. One is the quilt, another is the enameled cloth, the other is to use the naked frames; and it might be worth while, instead of discussing the matter, just to take a vote on that, how many prefer the naked frame.

Pres. York—How many prefer the enameled cloth, just raise your hands? 5. How many prefer quilts, raise your hands? None. How many the naked frames, without anything over them? 12.

Mr. Whitney—It would depend upon what that quilt is used for. I would prefer a quilt for certain purposes. I do not know the difference between the enameled cloth and the board, because I use the enameled cloth and I know nothing about the other. But I use

a quilt sometimes over the section-cases to keep them warm.

Mr. Abbott—Do I understand they are used without any covering at all—any board, or anything?

Dr. Miller—Let me explain, Mr. Abbott, that this is a body of bee-keepers, and that they have their little ways of talking about things without using a lot of words!

Mr. Abbott—They should use good English. The best thing I ever saw to put over the top is a board.

Dr. Miller—That is a good thing too! (Laughter).

Mr. Abbott—Mr. Wilcox says they stick fast to the boards. In most hives they only touch in two sections, and I do not see how they stick as much as the cloth. When we used to use a cloth in Missouri the top would stick fast.

Mr. Wheeler—How about the bees?

Mr. Abbott—That is the way they do, and there is a row of propolis right around, just the shape of the section. I never saw any in Missouri that did not do that.

Mr. Wilcox—I am surprised, for I have used them for 40 years and never saw a single instance of sticking to the enameled cloth. I am sure that won't happen in Wisconsin. They of course build new combs to them, so that the enameled cloth is stuck a little, but you can take hold of one corner and turn it back without disturbing or alarming a single bee, and for that reason I much prefer to use such an arrangement and to scrape the frame down, often, because they will build up to it, and sometimes push it up and fill up the space; but when you have only the board, if you leave it long enough the bees will stick it down and close the cracks airtight, and if you do not it will stick in places and the wind will blow right through under it from one side to the other. The heat must escape. It certainly cools off the top of the frames more than it does where there is an enameled cloth over it; and for that reason I prefer the inconvenience of the enameled cloth rather than the board with its perfect fitting on the upper edges of the hive.

Dr. Miller—May I ask, Mr. Wilcox, whether you ever knew your bees to carry the black material from the oil-cloth down and use it in the section-combs?

Mr. Wilcox—I have known several such instances. It is not a common oc-

currence. If there should be any ragged edges the bees could get at they would tear it out, and they might carry it down and attach it to the cappings of the combs in some cases.

Mr. Abbott—Will they cut holes through them?

Mr. Wilcox—No; I never knew of it. A worm will do it, and do it quickly, if there are any moths in it, but the bees do not do it unless the enamel is cracked from being handled when cold.

Is HONEY VEGETABLE OR ANIMAL?

“Is honey a vegetable or an animal product?”

Dr. Miller—Yes.

Mr. Abbott—I think some that I have seen in our market was purely animal, and two-legged animal. The ordinary honey I think is vegetable.

Mr. Taylor—Is a boiled potato an animal or a vegetable production?

Dr. Miller—I believe that is really a serious question, after all. I am sure I don't know what the answer is.

Mr. Moore—About a boiled potato?

Dr. Miller—Mr. Taylor's question is entirely applicable, and yet the question would come, Where is the line to be drawn? I should say a boiled potato was a vegetable without any question, because it has not ceased to be a vegetable, and yet the thing gets mixed up and in the case of the bee here is a vegetable material that is afterward worked up by an animal and there is animal matter in it. I confess I don't know. I wish I did know. If Mr. Taylor has an answer to it, I wish he would give it to us.

H. M. Arnd—I asked that question. I knew it would cause a good deal of laughter, but one of my customers met me on the street the other day, and I told him that honey is vegetable, and he argued and argued with me that it is animal. I told him there was going to be a bee-keepers' convention, and I would bring it up.

Mr. Wilcox—In my opinion it is a vegetable product. There is nothing animal about it. Sugar is not an animal product. Sugar syrup isn't animal; has nothing to do with it. It is derived from a vegetable in the first place, and it is boiled down—as it were, somewhat digested, perhaps—I am not sure about that—but at any rate, it is derived from a vegetable and retains a vegetable character, and there is no animal character injected in it, although it might

be digested and assimilated and converted into animal, but I do not think it has reached that stage.

Dr. Miller—We do know that there is injected into the honey something by the bee. Come back to milk. Is milk a vegetable or an animal product? If you are going to rule honey out, and say there is nothing animal about it, by the same token we can rule milk out. There were those who said that honey was gathered from the flowers—bees do not make honey. There were those who said, the bee makes honey. I think nowadays we are pretty nearly all agreed that the bee has something to do with making honey. If it has, look at it and see if there is something animal in it.

Mr. Moore—Maybe this will throw some light on the question, the illustration of the maple tree. A man taps the maple and carries the sap to the sugar camp and boils it down. There might one of his finger-nails drop in it, or even a lock of his hair; there might be some slight mixture of animal with the vegetable. Here a bee carries the sweet from the flower just the same as a man carries sweet from the tree.

The Members—No, sir! No, sir! Not a bit of it!

Mr. Moore—There is no chance for argument, I believe. They are both vegetables, absolutely, all the time.

Mr. Taylor—if the bee should carry the nectar, put it into the cell and leave it there, what would it be? Would it be good honey?

Mr. Moore—Bad honey is honey, just the same.

Mr. Taylor—No; it is nectar.

Dr. Miller—Mr. President, wouldn't it be of advantage to talk about something we know something about?

Pres. York—*Sure!*

Mr. Kimmey—if we are going to talk about something we know all about, there is no use of talking. We might as well go home.

Pres. York—I think a convention of bee-keepers ought to know something about honey.

Mr. Kimmey—Perhaps you will remember a few years ago we were talking about the same question, and I asked Dr. Eaton, the Illinois State chemist, if it were possible for a chemist to produce a single drop of honey, and he said no. We may talk about bees gathering nectar from the flowers; it is not honey. I once, at a table said to

a lady, "Why do you put cream in your coffee? Why not put in butter? It is the same thing." "Yes," she said, "Why not put grass in your coffee? It is the same thing." It isn't the same. You can't make a drop of honey unless you let the bee go out and gather the nectar and put it in its organism. I have tried to find out exactly what they do. You honey-dealers just keep quiet a little and try to look wise. I have seen some of your product and, unknown to you, I have had some of it analyzed. You do not get honey until the bees work it over. I think you can say they make honey just as surely as the cow makes milk, and in that sense I think it is an animal product, from the matter of working over a vegetable product, just as lard is an animal product; perhaps not exactly work on it, but there is a change made which makes it animal instead of vegetable. It is not simply gathering nectar.

On motion, an adjournment was taken until 1:30 p. m.

FIRST DAY—SECOND SESSION.

The convention met at 1:30 p. m.

Pres. York—Is there anything to come before the convention before we take up the questions? Under the heading of Miscellaneous Business there is the question of joining the National Bee-Keepers' Association in a body. What shall we do about it?

JOINING THE NATIONAL IN A BODY.

Mr. Wilcox—I move that we join the National in a body.

The motion was seconded.

Pres. York—Are there any remarks on the motion?

Mr. Moore—Not to obtrude my own views on this assembly, but to get the subject before you, I want to object to joining the National in a body. My objections are nothing new. Our income is rather small. The Treasurer's report shows about \$22 in the treasury before this meeting, and when we join the National and pay them 50 cents, and join the Illinois State Association and pay them 25 cents, that leaves us 25 cents for our income, which is hardly sufficient to pay our expenses; and if this Association wants to continue joining both these associations in a body, I want them to do it with their eyes open to the facts in the matter. Do what seems best.

Dr. Miller—Across the ocean they are long way ahead of ours. Only this past week I noticed the Austrians were congratulating themselves that they had reached the number of 10,000. Then here is the united organization of pretty much all of those that use the German language, in which I think there are perhaps 30,000. They do it largely by the fact that the smaller societies unite, and if we consider it important to have the National Association what it ought to be—if it grows to what it ought to be—I believe it will be more than anything else by associations like this joining in a body. If we do not do it, the National is going to remain always a great deal smaller than it will if we do; and so for the sake of having the National encouraged and increased as it ought to be, I should even vote to increase the amount of money we pay into the treasury here rather than to withdraw from uniting with the National in a body—if that is the only question—the question of money—and it is necessary to have a larger amount of money. I consider it of very, very great importance, that we do that very thing—unite in a body.

The motion was put and carried.

On motion, it was voted not to join the Illinois State Bee-Keepers' Association in a body, a very influential reason being that if we join one State association we ought to join several, as different States are represented in the membership of the Chicago-Northwestern.

How to CONSTRUCT LANGSTROTH HIVES.

"How should the Langstroth hive be constructed for general convenience and durability among American bee-keepers?"

Mr. Taylor—A plain box, without any cleats.

Dr. Bohrer—I wrote that question. I began the use of the Langstroth bee-hive more than 40 years ago. I think in 1864 I used it first, and Mr. Langstroth himself used it at that time. I have seen a good many changes, some very valuable improvements, and some so-called improvements that in my opinion are not valuable improvements at all; at least, they would not work well with me, and in bringing up this question I have no war to make with the gentlemen who manufacture bee-hives. I believe it to be the duty of bee-keepers, not only as individuals but as an organization, to make known to the manufacturers what

their actual wants are, and ask them to make their hives in accordance therewith; and I believe they will do it. As long as we stand off and they go to work and make a hive of this idea and that and the other, you will have a whole lot of different patterns, and no one will suit but a few bee-keepers. I have never seen a hive that pleased me any better, that is, the construction of the frame, than Mr. Langstroth's frame as he used it 40 odd years ago. The bees in Kansas would not glue the frames together, as they do with what is known as the Hoffman frame. There are two valuable features about the Hoffman frame—the heavy top-bar and grooves. The frames as constructed by Mr. Langstroth I liked as well as anything at that day and time, but the grooved frame and heavy top-bar were certainly improvements. The Hoffman frame did not suit me at all. I killed too many bees, even if there wasn't too much propolis carried in. I object to that, and I object to the so-called improvement of the bottom-board being made out of lumber hardly $\frac{1}{4}$ inch thick, so that it will shrink and the bees crawl out of the bottom. It is too thin to ship bees in, and not safe to handle bees in to move them from one apiary to another, or even about the farm. I say to manufacturers, Don't make them that way. You are not benefiting us as you might do with another follower or division-board. I want it made out of something not less than $\frac{1}{2}$ inch thick. I would not undertake to ship a colony of bees with that kind of a bottom-board. I have to go to work and make new bottom-boards for those hives. They are absolutely next to worthless. I want to repeat that I am not making war upon any manufacturer, but when you manufacture a hive of that kind you are not manufacturing what the bee-keeper really wants—what he stands in need of.

And now on the production of comb honey. I am not handling bees much for comb honey. Men who do would know more how to dispose of that feature of the subject than I do. My idea is and has been for years, that I can produce more honey and cheaper and can sell it for less money, and in the long run make more money, than the man can who produces comb honey alone, that is, by the use of an extractor.

Mr. Sewell—The hive I use myself I can make for about 25 cents. I mean

I can get it cut out at the mill for about that price, and it is a good hive. But perhaps it could be improved quite a little. While I had a Langstroth hive when I was about 10 years old, yet I have not had very many hives since, for the last few years not over 5, and it seems to me I could learn a great deal about hives. The hive that we have is a dovetailed; that is a little more expensive than necessary, it seems to me, but I don't know. Perhaps 20 years is long enough without painting, but if they last 20 years without painting, they ought to last considerably longer if they are painted; but it is a question that I think all of us are very much interested in. Personally, I like the halved corner better than the dovetailed corner.

A Member—Can you get that for 25 cents?

Mr. Sewell—I mean just the brood-chamber. The hive I use is a very plain hive. I don't know that I need to describe it, but I would like to hear more said about this matter. A great many of us want more hives. We want them as cheap as we can get them. We want them as plain and as easily operated as possible, and we want them to last just as long as possible.

Mr. Taylor—I have had considerable experience in using hives and in making them. Some here have had more experience than I have, but I should say that if a person wishes to use a Langstroth hive, to make it just as plain as he possibly can. If he wants anything over and above the boards sawn square across at the ends of the hive, he can make it a little firmer at the corners, but I do not think that is necessary. If made out of good, fair lumber, what we used to call "cull lumber"—they don't call it cull lumber now (lumber with some occasional "shakes" in it, or a worm-hole)—and nailed together at the corners, it will last 30 or 40 years, with reasonable care. All it wants is a plain bevel at the ends inside, and it does not want any cleats around the outside; it wants handholds, and that is all I should put in a hive. There is no need of paying in \$1.50 or \$2.00 for a hive, when you can make one from which you can get just as much honey for 25 cents.

W. Z. Hutchinson—For the bottom-board I would just have a plain board. Some make a board with a cleat at the end to keep it from warping, and a rim on each side. I agree with Mr. Taylor

about the sides—just plain boards nailed together.

Dr. Bohrer—How thick do you make your bottom-board?

Mr. Hutchinson— $\frac{7}{8}$ inch. Plain handles to lift it by; cover and plain end; plain rabbets at each end to hang the frames in; and all-wood frames.

Mr. Abbott—I am interested in where these brethren live, that they can buy lumber enough to make a box as big as a hive frame for 25 years. Take any hive-frame, make it 12 inches long, where can you buy that amount of lumber?

Mr. Taylor—How many feet are in it?

Mr. Abbott—You can figure it yourself. They charge down in our country for the cheapest kind of ship-lap that you can get—that is, so full of knots you can't put your finger down where there isn't a knot—\$2.50 a hundred.

Mr. Taylor—Move into Michigan.

Mr. Abbott—And for any kind of lumber such as used in a modern beehive you have to pay from \$3.50 to \$4.50 for the lumber. We could go back and wear homespun jeans, if we wanted to; we could go back to the long-horned Texas steer; we could go back to a great many things; we could go back to homely men and women if we wanted to; but in these modern days we want a good looking woman, a well-dressed man; a fat, sleek cow; a fine house and an automobile; and I do not see why a bee-keeper is not entitled to just as good things as other people. Thirty years ago they said that cheap clothes made a cheap man. There is a good deal of truth in that. And cheap beehives make a kind of cheap bees and a Cheap John affair all around.

Mr. Taylor—We are not proposing to go back. We are proposing to go ahead. These men who are making supplies are inviting purchases, and they are asking big prices, and men who have not very much experience—who have not the ability to make their own hives—are buying them. When they get those hives and put bees in them and look after their crop, where are they going to get the money, after paying for all this stuff, to buy their fine Jersey cows and their automobiles and their fine houses? I tell you, we are in the business to make something out of it, and we can't make anything out of it if we go to these men and buy the stuff that they offer at their prices. That is the way I look at it.

Mr. Stuebing—I think every bee-keep-

er will pay a little higher price if he gets a good bottom-board and a good cover. I think they are the important things.

Mr. Wheeler—I am a friend of the bee-keeper, and a friend of low prices as far as you can get a good article for a low price, but at the same time on this bee-hive body, I think the dovetailed corner is a great improvement. I have had hives side by side and have tried them for 15 or 20 years—one with corners simply nailed together, and another lot where I dipped the dovetailed corners into a good strong paint, drove them together, and they have stood the weather nearly 20 years without being warped or twisted. I believe the dove-tailed-corner bee-hive is far and away ahead of the other, in which the nails will rust and they will begin to twist, and they won't either fit the cover or fit the bottom-board, but they will twist out of shape, out of square. The dovetailed-corner hives, if they are put up right and driven together, with new paint, will last indefinitely. They will never lose their shape, and no matter if the nail rusts off they will keep their shape. They have great trouble nowadays with the nails rusting off. It is surprising how well those hives will keep their shape even after the nails are gone. I am in favor of the dovetailed corners.

Dr. Miller—There are so many different points of this question we hardly know where to grab on. One thing that has been neglected is the cover. That has not been tackled, and the thing I am most anxious about is the cover. We haven't a good cover yet that I know of—a satisfactory cover. Some of these good people that have learned how to make hives, let them tell us how to make the cover.

Pres. York—Mr. Hutchinson says a $\frac{1}{8}$ cover.

Dr. Miller—Plain board, with a cleat on each end. I have had lots of them. They will warp so that a bee will crawl out from underneath, "in my locality." It makes a very satisfactory cover; if it would stay always new and always straight I would like a plain board cover, I wouldn't want any thing better. Another objection to them is that they do not protect enough. They don't keep warmth enough. A cover with an air-space is very much better than that. They are very expensive; but if we could get one that was reasonably inexpensive, I should like that kind better.

Dr. Bohrer—Dr. Miller, do you use covers made in 3 pieces, that is, the cover itself, with the cleat on the end? How do you like them?

Dr. Miller—I have used them with 3 pieces, with 2 pieces, and with one piece. The one piece is the most satisfactory for me, and yet it has that objection. I can not keep it square, and no amount of cleating will keep it square, either.

Mr. Taylor—What kind of lumber do you use?

Dr. Miller—I never tried basswood. That might twist worse.

Mr. Taylor—What kind of pine?

Dr. Miller—A white pine.

Mr. Taylor—Your locality must be very bad.

Dr. Miller—It is.

Mr. Wilcox—I shall have to agree with Dr. Miller about the covers. I have them in use and have for many years, and as they get older they will warp and sometimes crack. I have never been able to make any that would stay good, year after year, for any great length of time. We have fine yellow pine up in our country. If it were not for the cost I would want a gable roof, and I would really think I would do better if I had a little cleat around the outside of the hive, and had that set over on that. I rather object to the wind blowing straight through it under the cover—in at one side and out at the other. It ought not to do that. I would have room for covers if I wished to use them. I believe the cover is quite an important matter for the bee-hive. There is just one more point in regard to the dovetailed corners. If you are going to buy your hives made in a factory, they are a nice thing, and I would buy them. If you are going to make them yourself, don't, because you make them up pretty quick and they are liable to shrink, some pieces more than others, and the dovetailing does not fit. Another reason why: I can make a very good hive and one that will stay good by rabbeting the end pieces $\frac{1}{8}$ inch deep half way through the board. That is equal to 7-16 inch deep on the three sides. The top and the two ends and the side of the hive are nailed into them, and they are also nailed the other way. They are nailed both ways, and they hold together just as well as the dove-tailed. I have had them in use side by side for the last 10 or 15 years, and can see no difference; and it is easy enough to make them that way.

Mr. Taylor—I want to say a word about the cover. I have a great many covers. Of course, once in a while one will warp a little, but I would not use a $\frac{1}{8}$ inch board. I would use a $\frac{5}{8}$, and you see at once the reason for it. It has not the strength in warping to draw the cleats out of shape. I would use a $\frac{5}{8}$ inch board, and instead of using a single cleat at the end I would have a flat piece nailed on to the end of the cover even with the upper surface of the board, and then another flat piece up on the top covering the first cleat and part of the board. In that way you will likely get those two parts of the cleat so that they will not both want to go in the same direction if the cover wants to warp. If you use that thickness of board, $\frac{5}{8}$, and cleat them in that way (I can't give the size now of the cleats I use, but not very heavy), there will be very few of them that will warp to do any damage.

Mr. Wheeler—I have one idea on this subject. It is not my idea; it is the idea of James Heddon. The first cover he put out gave a space all around and under the cover. We tack a strip on the outside edge of the cover on the side and a cleat on the edge—I presume you have seen them described in the American Bee Journal—so that the cover sits on the rim and does not crush any bees; and if the board in the center warps, the outside rim sits square because it is fastened to the ends. The 4 pieces around the hive are fastened together, and if the center board warps or twists a little bit it does not allow the cover to change so that the bees can escape. The warping of the main cover does not affect the warping of the rim outside, which will maintain its shape, because the ends of the 4 pieces around are nailed together, and rest down on the square hive. I like it very much, and I do not have any trouble at all with the cover warping enough to let the bees get out or the cold weather to get in.

Mr. Hutchinson—When a board warps, it is the heart side, that is, the convex; and in nailing up the hive turn that side up. It is at the corner of the hive, and not in the center—it is always at each end. Nail them up with the heart side out, and then the tendency is to warp to the center, and that is almost impossible. If the corner will stay the board will last.

Dr. Bohrer—I want to sanction what

Mr. Hutchinson said in regard to the manner in which boards ought to be put together, whether top, bottom or side. With regard to the roof of a hive, I think, as Dr. Miller said, that it is one of the most important things connected with the hive, to have a roof that will not leak, and one that will be the least trouble. The roof that has given me the most satisfaction is made of two boards, coming together in the center, and the outer edges being dressed down, beveled with almost a feather edge, or $\frac{1}{2}$ inch, maybe, at the outer edge, and $\frac{1}{8}$ in the center, and then a saddle-board on top of that. In putting them together they won't come down square on the roof, and I make it a rule to put a weight on them—a brickbat. That will usually weight them down, and I do not find that kind of cover to warp very much. There is the cover made of two boards, in the center a piece of tin, and as long as the tin is well painted it will last 15, 20, maybe 25 years. In calling this question up, understand it is not the price of hives that I wanted to bring up a discussion in regard to, but for convenience and durability—that is what we want. The price is one thing, and the question of durability and practicability is another.

NATIONAL FOOD LAW AND HONEY.

"Will the National Pure Food Law, enacted by Congress, increase the sale of either or both comb and extracted honey?"

Mr. Taylor—No.

Mr. Nau—Yes.

Mr. Arnd—I think it will. At least I have found it so in the grocery trade in Chicago. We used to have to send a wagon to sell our honey, and now they come to our place and get it. Those people that have been putting up bogus honey are out of business today. I think it will increase the sale of pure honey.

Mr. Wilcox—I think the more pure food laws we have the better. It does increase the sale of honey. The pure food law increases the sale of almost everything that has been adulterated. It restores confidence in the product, and the people will buy. I think it is a good thing in that way.

Mr. Wheeler—I would like to ask what is going to be done about the honeydew that happens to get in the honey. How are we going to meet that?

Mr. Moore—I think the answer to

this is that this law, as drawn, includes honey-dew—a small amount. It is not illegal to have a small amount of honey-dew in the honey. That is my understanding of it.

Mr. Wheeler—That is rather indefinite, isn't it, a small amount? What does that mean? One inspector might say it was a small amount and another, a large amount.

Mrs. Glessner—Isn't the adulteration to be by man instead of the bees?

Mr. Taylor—Not according to the law. If there is too much water in it it is adulterated, even if the bees do it, as I understand it.

Pres. York—I would like to hear from Mr. Burnett on this question. He has a little (?) experience in honey, and probably can tell whether this law is going to have any effect upon the sale of either comb or extracted honey.

Mr. Burnett—It has not been in force long enough for me to give an opinion on it!

Mr. Abbott—There seems to be a misunderstanding about the law, and bee-keepers ought to understand it thoroughly. The lady is correct as to the adulteration—the statement of the law; but the Board of Agricultural Chemists have made some rulings in their application of the law as they understand it, and those rulings become law, and among the rulings the last circular that was sent out by Dr. Wiley's department, who has charge of that, it is said a small portion of honey-dew could be included and it would not be considered adulterated; but they specify how much water may be in; in other words, they describe what pure honey is, and if it does not come up to their tests, no matter where it came from, it is impure. If you get it out of a bee-hive, and never put anything in it, if it won't stand the test of the law, it is impure. The same thing occurs in milk. The regulations, I presume of Chicago, make it 3 percent, butter-fat; they do in Kansas City, I know. It is a fact that Holstein cows, and some very good ones, give milk that tests but 2½ percent, and a man was arrested in Kansas City for selling Holstein milk that he milked from his cow. It was a gross injustice, of course, and the law ought not to be administered, in my opinion, in that way. Bee-keepers ought to take that matter up and agitate the question until there is some relief along that line. No man should be prosecuted for sell-

ing the natural product for what it is. A man who sells the milk from a Holstein cow that has 2½ percent, or even 2 percent, of butter-fat, ought not to have to go to jail for it, if he milks it from the cow, and does not put any water in it. Any law that condemns him is wrong. Any law that would condemn a man for selling what his bees gathered is radically wrong, in my opinion, and he ought not to have to go to jail for anything of that kind. But as a bee-keeper he ought to avoid putting anything on the market that would injure his trade. I would not do that, not because I am afraid of going to jail, but because I do not want to injure the trade. Any honey that does not come up to the standard ought to go into manufacturers, or into the sewer. That is the way it looks to me.

Mr. Wilcox—I think a man that would produce milk testing less than 3 percent should be punished for it—not for the injury done to others, but for the injury done himself. A man who produces honey testing more than 25 percent water is producing honey that won't keep. If it is exposed to a warm temperature it will sour. I think the rules and regulations are right as they are.

Mr. Wheeler—Now don't you think that we are up against a hard proposition? We can't follow the bees and find out where they gather their honey. What in the world are you going to do? Are you going to have it tested every time you sell a gallon of honey? One colony may gather honey-dew, and another one clover honey. Who is going to tell? You put that honey on the market in good faith, and if it doesn't stand the test, what are you going to do? There was a committee appointed at the National Convention to meet with the chemists and formulate some kind of a formula for honey, and what did they do? They eliminated honey-dew—anything gathered in the shape of honey-dew was eliminated from pure honey. Of course, they say now a little of it will not do any harm—we will overlook a little of it—but that leaves the leverage with the man who tests it—with the chemist. He can put his finger on one man and not on another—do just as he pleases. It seems to me that the only straight way to do is to make honey pure when it comes from the bee—the only way that any man can safely sell honey—as long as he can not fol-

low the bee up, and he is not a chemist himself.

Mr. Moore—I do not think in his dissertation that Mr. Abbott quite covered this case fully. You must go back to the origin. Honey is the nectar of flowers gathered by the bees and stored in the combs. I believe that is where they start. But in order to protect an innocent party whose bees might have gone to the leaves of trees and gotten honey-dew and mixed a small amount with the honey, this small amount is allowed. But I think that there will be no trouble about this matter in the minds of any one who acts in good faith. Honey-dew tastes different, and the only trouble comes if you sell honey-dew and label it honey. You can sell all the honey-dew you please and label it honey-dew, or you can say, "Honey with a small amount of honey-dew," and if you, as experts—bee-keepers, honey-dealers, if you please—can not tell the difference between honey-dew and honey, if you do not distinguish anything about it, don't you believe that your customers will. If you conscientiously taste that honey and decide that it is all right, your customers will be pleased with it. You won't have any trouble along that line. This law is all right as it stands, for one who inadvertently has a small amount of honey-dew in his honey, but not so as to be distinguished by the taste. I take it that that is the point of the whole matter. If it is so thin, if it is so disagreeable, if it is so strange, that any of us bee-keepers or honey-dealers can distinguish it by the taste, you must not sell it as honey. The labeling of this honey-dew as honey is the danger-point. If there is any question in your mind you must put a label on it, "Honey with Honey-Dew." It seems to me that the pure food law has a whole lot of effects. I am not so sure that it increases the sale of honey. I don't know but it increases skepticism. When you call on wholesale grocers they say, "Is that pure honey?" and even about comb honey, "Your honey is pure, is it?" If you have honey-dew, I would advocate labeling it honey-dew, or not selling it. Sell it if you can, of course, but don't label it as edible honey.

Mr. Wheeler—I think this is a vital point. I have something right in mind that bears on that point very closely too. There is a town near Chicago that I watched closely this summer and the

trees were just covered—once in June and once in August—with this honey-dew. It was on the leaves of the maples, and the bees worked on that, morning, noon and night; all day they stored that, and I know of a person that is putting the honey up and selling it. He is a *bona-fide* bee-keeper, and undoubtedly he thinks that the honey is clover honey. I will wager any amount of money that that honey hasn't a particle of clover honey in it. I think those bees gathered that honey entirely from the leaves of the soft maple. I tasted it and it is not bad honey at all. It is dark. I was in a town this year where there was no clover honey or anything else except that secretion off the trees, and this man put that up and put it on the market. It makes a very passable honey. It is not as light as some, has a peculiar taste to me, because I have tasted a good deal; but supposing that honey is tested, I would wager that 97 percent of it would not pass the test. What is the man going to do? He put it up in good faith, put it on the market in good faith. It suits his trade. He is selling quite a lot. We bee-keepers ought not to favor a law of that kind. Supposing it is flavored a little with basswood and so on. You can't tell. People's tastes fool them. It seems to me it is favoring something we ought not to favor as a convention or as a lot of bee-keepers.

Dr. Miller—Just one point that Mr. Wheeler raises: If we look at the law of the State of Illinois, the honey definition is "material that the bees gather from plants." That will cover honey-dew. You will not get into any trouble with the amount of honey-dew you get in your honey, without specifying the amount, and I do not believe there is much trouble about adulteration. I take the ground Mrs. Glessner does. What the bees do without any adulteration on the part of man would not be called adulteration. There, of course, might be such a thing as their getting something that is not fit. I have tasted here in Chicago honey taken from the nectar of plants that I considered much worse than any honey-dew. I do not remember now what it was from, but it produced the effect on the mouth that eating Indian turnip does. The question before us is whether this law is a benefit to us or not. A fundamental question upon which that rests is, Did the putting on the market of all this

adulterated stuff hurt us as bee-keepers? I think we have pretty well settled that Karo corn syrup, and corn syrup of all sorts, was a damage to us; and when it has come that they must put on the label that it is so much glucose—you don't see it printed glucose, because the people would not stand glucose, but they will stand "corn syrup"—but if on the label there is such a percent corn syrup, the people won't take that. But I would give more for five words of testimony from a man like Mr. Arnd, who knows what has been done, than for all the theories.

Mr. Arnd—In selling honey to the grocery trade, especially to the wholesale grocery trade, we are compelled to sign an agreement that the honey that we sell to them, that we bottle, is put up according to the pure food law. How are we dealers going to protect ourselves so that we can sign these agreements without testing? Don't you think that the bee-keepers that supply us with the honey ought to furnish us with the same agreement, that the honey that they send to us will stand the pure-food test, and so right along the line, so that the dealers, grocery men, the retail men, and every one all along the line, can go back to the original bee-keeper if there is any trouble? I think the dealers ought to have some protection, because we have to sign an agreement that the honey that we furnish the wholesale grocery houses is up to the pure food test, and they have to furnish the same thing to the retail grocery trade.

Dr. Bohrer—I wrote the question, and what induced me to write it was, there has been quite an effort among bee-keepers (and I feel a deep interest myself in it) as to how to dispose of our product, and I have become convinced that one thing that caused slow sale of honey was that the people were suspicious that both comb and extracted honey were impure, and were an artificial product. All the advertising that the bee-keepers have been able to do up to the present time has been ineffectual. An organization sprang into existence in this city, I think it was, and some money was paid in. I did not take stock in it, did not become a member, for the reason that I was not an extensive producer of honey, having but few colonies; yet I felt an interest in the matter, and hoped that something would come

of it; but I will be honest, I did not have any faith in any good results growing out of it, I then believed, and I believe now, that what the people wanted was a pure food law, and when the people understand that no man dare to put a label "Pure Honey" upon any package, and put it upon the market and sell it, when it is other than pure honey—that, I think, will undoubtedly increase the sale of both comb and extracted honey. The people today believe that 4-5 of everything that goes on to the market in the shape of honey is bogus; that it is adulterated; that glucose is largely fed to bees, and that they store it in the combs. No longer ago than last winter at our State bee-keepers' convention in Kansas, I offered \$500 to any man who would bring 2 sections of comb honey that was made of artificial comb and filled with artificial honey. One man said he had it at home, and brought in 2 sections. I appointed a committee immediately, being President, and I asked him to aid me in the selection of the committee, so that no injustice should be done and that he would get his \$500. The committee said: "These two sections are not alike at all, and if they were manufactured by a machine they would be just alike; they would have to be." Well, he thought they were both artificial, but one had been made by one set of molds and the other in another set! Then the question naturally arose, How many molds would have to be obtained in order to make each section different? It can't be done. It is an impossibility. When the people come to understand this law, they will say: "Here, it is more than any man dare do to combine glucose with honey, perhaps put $\frac{1}{4}$ honey or 1-5 honey and the balance glucose, and label it honey and put it on the market." If he labels it honey and glucose, then that is another matter; but people want pure honey, both comb and extracted. These side-issues and questions as to what the Government may ultimately define as honey and a legitimate article to put on the market, are not fully determined, but when people learn the effect of this law, that glucose cannot enter into a package of honey, whether comb honey or put up in sealed packages, buckets, jars or anything; that they can buy honey and know it is honey; that there will be a United States officer to test it, and if it is not pure, the man's brand being on the pack-

age lays him liable to arrest and prosecution, you will find that the men who have been counterfeiting honey heretofore will not want Uncle Sam to handle them, because he does it without gloves. I remember, a good many years ago, I think in 1871 or 1872, at the Michigan State bee-keepers' convention, a Mr. Perrine was at that convention and said that a great deal of honey was now being prepared and made salable by getting the bees' comb honey and putting it into a jar and then filling it up. He said it was not always honey. In your agricultural papers and in your country papers say the sale of bogus honey is shut down on by Uncle Sam, that it is more than any man can do to put an impure preparation on the market and label it honey.

Mr. Taylor—What was the fact last year, Mr. Arnd, in regard to the crop of honey? Wasn't it all sold?

Mr. Arnd—Of course I don't know; but I think the honey was pretty much all sold.

Mr. Taylor—You understand it was pretty well cleared up before the present crop came on?

Mr. Arnd—I think so. Mr. Burnett could tell you more.

Mr. Taylor—How about this year? Will it be cleared up?

Mr. Arnd—I think so. I am not sure.

Mr. Taylor—How can the law help you if you sell it all any way?

Mr. Arnd—I don't handle all the honey there is.

Mr. Taylor—I am talking about the people who deal in honey. You are talking for the lot.

Mr. Arnd—I am talking of my own orders. If my orders come in faster this year than last I will sell more honey. Another thing, too, when orders come to you without your solicitation it shows it is being helped along.

Mr. Abbott—I want to suggest that the law could not do anything, for it is not in force until the first of January, and, besides, it has no relation to any honey except that which enters into interstate commerce. There is no pure food law in Missouri or in Kansas. I believe but few States have a pure food law corresponding with the National law, and you can adulterate all you please in the other States, provided you never send it out of them. Illinois has one, and it is the Illinois State law that is operating here, and every State in

the Union ought to have one like the National law. Let us keep that in mind, and go home and besiege our legislatures, if we want it to benefit us, to make a law in accordance with the National law.

Dr. Miller—We can vote on it.

Pres. York—All who think the National law will be a benefit, raise your hands. All who think it is not a benefit raise your hands. It seems to be all one way; those who voted, any way. Practically all think the law will help. The law is not in effect yet, and probably will be amended if there are any weak points in it, after a while.

REMEDY FOR BEE-PARALYSIS.

"What remedy, if any, have we for the disease known as bee-paralysis?"

Mr. Taylor—In my experience, a simple change of queens is all that is necessary.

Mr. Whitney—I asked that question. I had a colony of bees in June that developed what I supposed to be bee-paralysis; that is, they exhibited all the symptoms such as I have read about in the bee-papers; it was growing worse rapidly for about a week, and I thought it was being communicated to an adjoining colony, from the appearance of bees on the alighting-board. I got some sulphur and decided to experiment a little, even if I killed a colony of bees. I sprinkled sulphur all over the alighting-board, all over the bees, on the top-bars of the frames of both hives, and in 2 or 3 days I gave them another dose; inside of 6 or 8 days there was not a bit of the disease left. I did not know but what I had discovered something.

Dr. Miller—I have had paralysis among my bees; I painted my shop red and the disease disappeared. I do not know that there is any other disease, unless it be the disease of bee-stings, that has had so many remedies as bee-paralysis. One man says he has done so and so, and the disease disappeared. In this part of the country, as far north as this, I think it will generally disappear of itself, no matter what you do, or don't do; and I doubt very much whether anything in the way of medication or treatment will do any good, unless it be sulphur treatment. And I may say that is the only one that I have known of, that has been mentioned, that a number of people have not men-

tioned as having failed. I think so far no one has reported that the sulphur treatment has failed; but it is not original up in this part of the country. Mr. Poppleton, of Florida, is the one who has used the sulphur cure, and really I have a great deal of faith in it. I think so far no one has reported who has faithfully tried the sulphur cure and it has failed; and until some one tries that faithfully and says it is a failure I shall have some faith in the sulphur cure. I do not know anything else that has been reported but what has been a failure. A number have reported the change of queens and a cure resulting, but a number of others say that they changed queens and it did not cure.

Mr. Taylor—I had a colony that was very badly affected with paralysis. It was early in the season, and I got a queen from another colony and took out the queen that belonged to the affected colony and put in the new one. I put her in a cage, and soon after I did the exchanging a bee-keeper from the neighborhood called on me and wanted to know if I could not let him have a queen. I told him that I hadn't any queens to spare, but I had just taken one out of a hive that I did not consider of any value, and if he wanted to take her and try her he might. Accordingly he took her. In 3 or 4 weeks he was back again, and I inquired how the queen had done, and he said that the young bees were shaking terribly, while mine were steady and all right. I thought that was pretty good proof, at least in that case, that the changing of the queen had completed a cure, and that the difficulty was with the queen.

Mr. Wilcox—Transferred the disease, you mean?

Mr. Taylor—Transferred the disease to another colony.

Mr. Whitney—Doesn't that prove that the sulphur remedy is of value?

Mr. Taylor—I do not think it has any bearing on it.

Mr. Whitney—I did not change queens, but I gave them a dose of sulphur.

Mr. Taylor—I don't know what else happens in the hive. We guess too much about these things.

Mr. Hobble—I have one or two colonies every year that have what I suppose to be paralysis, and when I had the first one I knew nothing about treat-

ing them in any way, and I gave them a good dose of salty water. They got well all right. I have continued that from that time to this, and I have never lost a colony, and they have always come out all right.

Mr. Kimmy—How do you administer the dose?

Mr. Hobble—I put the salty water in a little pepper-box; take the hive cover off, and then shake it all over the hive, letting it run right down over the frames.

Pres. York—You sprinkle or spray it on the frames and bees.

Mr. Hobble—I have never lost a colony yet, and they always got well in the course of about a week.

ELECTION OF OFFICERS.

After an intermission, election of officers was taken up, and resulted as follows: President, George W. York; Vice-President, Miss Emma M. Wilson; of Marengo, Ill.; and Secretary-Treasurer, Herman F. Moore, of Park Ridge, Ill.

Pres. York—I hope every person who is here now will remain for the evening session. We have invited some singers, and expect to have quite a little musical program to begin with, both instrumental and vocal.

In accordance with what had been the custom for several year, Secretary Moore was allowed \$20 for the past year for his services.

AGE OF LARVAE FOR QUEEN-REARING.

"What is the age of larvæ chosen by a queenless colony from which to rear queens?"

Mr. Taylor—My answer probably would not be agreeable to all. My experience is that they use larvæ from 2 to 5 days old. I used sometimes to experiment in rearing queens, and of course in those days I was very curious, and observed closely with regard to what they did choose—what sort of larvæ they did use for rearing the queens—and I found that they chose larvæ of different sizes, so much so that I was in the habit, when I wanted queens from those reared in that fashion, of looking through the hives in the course of 5 or 6 days after the colony was made queenless, and examining the cells and removing from the cells those larvæ which appeared to be too large. I found proof of that fact

in the time required for the hatching of the queens. The queens with me begin to emerge in 10 days from the time the colony is made queenless. If the bees chose larvæ two days old it would not be possible for the queens to emerge in 10 days. It would take at least a day or two longer, because until the larvæ are chosen for the purpose of rearing queens, their progress is slower. It takes a worker to mature say 20 percent or more longer than it does a queen, so that the larva of a queen would have advanced as far in 5 days as a worker in 4 days; so I will say that the choosing of a larva first devoted to the rearing of a worker must take a little longer than one devoted from the first to the purpose of rearing a queen. Dr. Miller will not agree with me. He made an experiment several years ago—and I wish I had it here—quite an extensive experiment on that very point, to prove, as he claimed, that the bees never choose larvæ that were more than 3 days old. But as I looked at his experiment, which was very elaborate, and which was thoroughly discussed both by himself and myself, I thought the experiment showed conclusively that larvæ more than 3 days old were chosen. Of course now, after the lapse of time, I can not enter into the particulars, but that has been my experience.

Dr. Miller—I do not understand part of what Mr. Taylor said, that the relative worker and queen time is 4 days and 5. I don't know what that means, but I do know that he says that he had queens emerge 10 days after the time that the bees selected the larvæ. Do I understand that, Mr. Taylor?

Mr. Taylor—After they were made queenless.

Dr. Miller—Now if they chose the larva immediately upon being made queenless—I do not think they do; I think they must take a little time, but they do not take a great deal of time to find out that they are queenless; but if they do, there is 10 days that is taken from the time. I don't know how many days Mr. Taylor will say that the queen takes from the time of the laying of the egg.

Mr. Taylor—It varies from 15 to 17 days.

Dr. Miller—It was 17 days when I was a boy; it was 16 days some 20 years later, and now the latest authority

gives it 15, although it varies, as Mr. Taylor says. I think 15 is what Mr. Cowan says. I saw that very thing last week in the British Bee Journal. Take 10. from 15 leaves 5; and take 3 days in the egg state, leaves us 2 days for the larva state. But I don't think it will figure down as close as that. Now I will give you some experiences on that same line: For a number of years I have been rearing queens by allowing a colony of best stock to start a frame of brood, and then I would take that frame having eggs and larvæ of all ages up to that which is nearly ready to be sealed over, or perhaps ready to be sealed over, and put it into a colony which I had made queenless. I reared hundreds of queens in that way, and I never had one of them emerge until 12 days after the colony was made queenless and that frame put in there. That is the way it is in my locality, and that same rule holds over in Germany, I find by the authorities over there. In cases where bees are allowed to select for themselves the larvæ they want, they in every case select what will be 12 days in hatching out. I don't know just how Mr. Taylor's and my experience have been so different. One thing I think has helped to create the impression that the bees select larvæ too old: Make a colony queenless, and if you just take the pains to lift out a frame and look at it—Mr. Hutchinson says that the bees will select larvæ too old. I will ask him to say what they do nowadays. Bees have improved. They may have done other things when he was young, but what do they do nowadays? Have you tried that, Mr. Hutchinson?

Mr. Hutchinson—No; I have been too busy.

Dr. Miller—You will always be too busy.

Mr. Hutchinson—I tried it years ago.

Dr. Miller—They didn't do it years ago.

Mr. Hutchinson—They did just the same with you years ago.

Dr. Miller—You refer to the first volume of the American Bee Journal, and you will find that the time for rearing a queen is 17 days. Now it is 15 days.

Mr. Hutchinson—Not always.

Dr. Miller—To go back: I said to make a colony queenless, and lift out the frame and look at the size of the

larvæ—and I don't believe there is a man here, or woman either, that would say that the larvæ were older than 2 days, if they are at all familiar with the size of larvæ at certain ages; let that colony go on for a week or so, and they are not satisfied with the queens they start; they will keep on starting them, and after the time comes that there are no larvæ young enough to

Mr. Taylor.—Yes.

Dr. Miller—They don't always, because they don't always have the stuff before them. When they have their choice of the right and wrong kind of material they will always use the young, never the old.

Mr. Taylor—That is not material at all. I have got the queens from too old larvæ. You admit that now.



President GEORGE W. YORK.

make proper queens they will still keep on starting, and will then start queens from larvæ that are too old.

Mr. Taylor—That is all I claim. [Laughter].

Dr. Miller—Will you put in words what you claim?

Mr. Taylor—I claim simply that they do not always use larvæ young enough.

Dr. Miller—Then we are exactly together.

Dr. Miller—No, not necessarily. If you take all the cells that they will start, old and young, then you will get some that are too old. Leave them to themselves to rear the queens and they will never have any that are wrong, because the ones they first start will mature ahead of the bad ones. But you meddle with it, and take out all the cells, and you will get the bad cells as well as the others. The point is this:

Bees allowed to select, given free choice of brood of all ages, will never select a larva that is too old for a good queen; and if they did do that, then some of those should have matured and emerged before the period of 12 days, and they never do.

Mr. Hutchinson—When I take away a queen from a colony and leave the brood of all ages, I almost invariably get some poor queens; but if I allow all that brood in the hive to mature, and then give them a frame of just hatching brood—just put in a comb filled with eggs nearly all of the same age—I don't know that I ever got any poor queens. Where they had larvæ of different ages to choose from, sometimes they chose too old larvæ, but when they had nothing except the young larvæ to choose from, had no larvæ that were too old, then the queens were always good. I have found in rearing thousands of queens that it is not safe to allow a colony more than 10 days for the hatching of the queen. If you wait more than 10 days, when you go to the hive you will quite likely find some of the larvæ hatched.

Mr. Taylor—It is so invariably in Michigan.

Mr. Wheeler—At one time I lived about 50 miles south of where Dr. Miller lives, and my experience was the same as in Michigan—10 days from the larva. It may be different now. I have not tried it for a few years.

Dr. Miller—I tried it last year.

DISCRIMINATING AGAINST CERTAIN MEMBERS FOR OFFICERS.

"Should the constitution of any bee-keepers' association bar any of its members from holding an official position in the association?"

Mr. Taylor—Using the words of a noted author, "I don't know."

Mr. Wilcox—I do not think any of us know the constitutions of all the various bee-keepers' associations. That question was evidently asked in reference to some association other than this.

Pres. York—No. The question is: Should the constitution bar any of its members from holding an official position—should the constitution be made in that way?

Mr. Wilcox—Whoever wrote that question was thinking of some other

association than this, probably the National.

Pres. York—Not necessarily.

Dr. Miller—He might be thinking of this association, whether the constitution ought to be changed in that way for this association. You can't tell what the questioner was thinking about. If you will allow me to say so, I think he was thinking of the National, and what was done at San Antonio.

Dr. Bohrer—I wrote the question, and I will tell you what I was getting at. I know there was proposed an amendment to the constitution of the National, to bar certain members of that Association from holding official positions because they were dealers in bee-keepers' supplies, or editors of bee-papers. There was an effort of that kind made, it is true, at San Antonio. I opposed it and declared then that if that kind of an amendment were added to the National Association I would not be a member of it any longer. I took the position, and Mr. Kimmey here took the same, and the constitution of the United States takes the same view of it, and all the States of the United States, that there is only one class of people barred from being eligible to the presidency of the United States, and that is foreign born; and the constitution of any organization must apply to all its members. If not, it is un-American and unjust. It places the members in a state of alienship before that association, and I was opposed to it, and I believe it is our duty to discuss that question here. I am a member of the Kansas State Bee-Keepers' Association—President of that organization—and a member of the National, and I do not want an amendment so un-American as that, and so unjust as that, to become a part of the organic law of our National organization or of any State organization. I took the broad stand, and made the sweeping declaration, and I repeat it, that if it became a part of our organic law I would not be a member of the organization any longer. While it may not be at all times policy upon the part of the members of the organization to elect a dealer in bee-supplies to an official position in that organization, it is simply the duty of every individual member, if he does not want a man to serve in an official position, to vote against him, and so get rid of him; but place the membership on a common

equality before the law, and if the members for any cause see proper to elect a man that is a dealer in bee-keepers' supplies, they have a right to do so. If they find when they put him in office that he warps and twists his position for selfish purposes, they do not have to re-elect him; but know how to "sit down" on him in the future. Some of the best and most worthy members of the bee-keepers' associations in the United States have certainly been

and his will. An amendment of that kind would bar the great Langstroth. Our worthy friend Dadant (I give him all praise that is due him; I would not take a laurel from his brow) seemed to favor an amendment of that kind to our constitution, stating that some of our Eastern bee-keepers, notably the State associations of Pennsylvania and New York, would withdraw from the National if it did not become a part of the organic law of that Association. 1



Vice-President EMMA M. WILSON.

dealers in bee-keepers' supplies. Among them was the great Langstroth himself. A purer-minded man never lived, in my opinion. I speak from having known personally the man, having been in his apiary and talked with him on different topics, and he was a pure-minded man, first, last and all the time. He never would accept an office. I do not believe he was ever an officer. He may have presided at one meeting in Cincinnati, but it was against his inclination

do not believe that the bee-keepers of New York and Pennsylvania feel that way; and I do not believe, if they are fairly dealt with, and that question is fairly discussed before them, that they will vote in favor of that kind of an amendment to the constitution. I hope they will take the broad view of it, that all the members are on a common ground. If you do not want a man who deals in supplies to be an officer, do not elect him; and any other person who

is not fit for the position—sit down on him likewise. It is our duty as American citizens, and members of a growing institution, to select the very best men and women that we have for our official positions—persons who have energy, and will put some push and life into the pursuit in which they are engaged and that which they represent. If I were the Secretary of the National Bee-Keepers' Association I would feel it a duty to push the interests of the Association everywhere possible; and if I were President I should do the same thing; but I am not electioneering. I would not have an office in the Association.

Mr. France—I want to say just a word of explanation to Dr. Bohrer, and for the benefit of some others, as I was at the San Antonio convention. The disturbance in the East is a good deal like some church choirs that I have been in before now. Some wanted to be heard, and because they couldn't be heard just as they wanted to, they made a little disturbance; but the choir kept right on singing; and since the San Antonio meeting, 88 from New York State, and 104 from Pennsylvania, have voted, and sent their dues direct to the National. [Applause]. And in the election of the National officers, of which I have received returns it is quite nicely divided up—the election of Mr. L. A. Aspinwall, for President; Vice-President, Geo. E. Hilton; Secretary, Jas. A. Green; General Manager, N. E. France; Directors, G. M. Doolittle, Jas. A. Stone and R. A. Holekamp. You will notice if you are going to draw the line on bee-supply men, the majority of these have handled supplies, more or less.

Pres. York—Mr. Aspinwall and Mr. Hilton are from Michigan; Mr. Green is from Colorado; Mr. France from Wisconsin; Mr. Stone from Illinois; Mr. Doolittle from New York; and Mr. Holekamp from Missouri.

Dr. Bohrer—if they don't supply anything else, they supply honey.

Mr. Abbott—There has been a good deal of agitation, and a good deal said in certain bee-papers concerning various fraudulent dealers. There are only 6 or 8 bee-supply manufacturing establishments in the United States, and probably 300 or 400 bee-supply dealers. I think these gentlemen who make such charges owe it to the bee-keepers as a whole to mention names. If Mr. Root

is a fraud we ought to know it. We all know him pretty well, and we don't think you can tell us anything new about him. If Mr. Lewis is a fraud we ought to know it. If the Falconer Manufacturing Company is a fraud we ought to know it, and so on around. We know them personally, and think they are all right. We think they are honest. We think they are honorable. We think they are engaged in an honorable, conservative, upright business, offering wares that the bee-keepers seem to want, for they are making their factories bigger and bigger all the time every year, and if it were not for the support of the bee-keepers of the United States they could not afford to do it. Now, if it is a crime to furnish people something they want, why, then, these people ought to be ostracized and excluded from associating with bee-keepers. If it is not a crime, let us stop all this nonsense about classes. The more we talk about classes, the more we divide humanity up into classes; the more we magnify the differences, the more strife and contention we make. I know a few of those New Yorkers will leave the National Association, but it reminds me of a remark that Ralph Waldo Emerson made once when an Adventist was talking with him very earnestly and enthusiastically to convince him that his philosophy was wrong, and that the world would surely come to an end. Emerson in his quiet, quaint way—and if you ever saw him you know he was very quiet and very mild-spoken—smiled, and said, "Well, what if it does? It won't trouble me very much. Somehow I think I can get along without it." Somehow I think the National Association can get along without about a half a dozen of those fellows, and if they do not want to come in, why, the world is as big outside as it is inside—let them stay out. It seems from the report of Mr. France that the majority of them want to come in. There are only a few of them in New York, and if they can get along without the National Association, and would rather not be in it, the National Association isn't going to die to accommodate them. It is going to live right on, and not stop breathing.

Dr. Miller—It is not because these men are rascals, as mentioned by Mr. Abbott—it is not necessary to take any such view as that. The resolution, if

I remember rightly, was that supply-manufacturers, supply-dealers, editors and department editors, should not be allowed to hold office; they are to be allowed membership. You will perhaps see the reason for that is that these supply manufacturers and supply-dealers are working in antagonism to bee-keepers; they are getting their money! And so are the editors, and so they should not be allowed to have office; and the department editors are aiding them, and on that account they should not be allowed to hold office; and those who assist them—the members in helping to get subscriptions for these papers are aiding these same editors—they should not be allowed to hold office; and the men who subscribe for those papers are helping the editors, and they should not be allowed to hold office. Well, I don't know just how far that thing is going. [Laughter].

Dr. Bohrer—Doctor, I suggest one more alteration or amendment to the suggested change in the constitution—that they include everybody that purchases or handles bees and honey, and then they would have the thing just right.

CHARGING DIFFERENT PRICES FOR SAME KIND OF HONEY.

"Is it policy to charge different prices to different parties for honey that is alike?"

Mr. Hutchinson—Same quality of honey?

Mr. Meredith—The meaning of the question is this: Is it policy to sell honey of the same kind to 3 different parties, charging one say 10 cents, another 12 and another 15. I asked that question for the reason that I found there were some customers that concluded that they wanted honey that cost more than a shilling a pound, because somebody else had honey that was selling for 15 cents a pound while my price might have been 13 or 14 cents. I asked if it was policy to sell honey in that way.

Pres. York—That reminds me of something I heard about an Evanston family—you have all heard of Evanston, I suppose! They discharged their cook because she did not run up big enough grocery bills. Their neighbors spent a good deal more money on their table than she had been doing, so they discharged her—to keep the grocery bills

up to the same height as their neighbors. They thought they ought to pay more. Some people think that unless they pay a large price they are not getting a good article. They feel better when they pay more. I don't think that applies to bee-keepers, though!

Mr. Taylor—It might turn out to be a bad policy, if they found out it was the same honey.

Mr. Moore—I have sold honey for 20 years. I think it is really an individual matter in which the customer is not very much interested. The customer wants to buy fine honey, and he wants to pay the price agreed upon; but you,



Secretary HERMAN F. MOORE.

as an honest man, must treat them all alike. You may sell the same grade of honey at different prices. A man who buys one pound pays 25 cents. A man who buys a 60-pound can—you will make more money by selling at a lower figure; and a man who buys a ton, you will make money by selling at a still lower figure. The only thing that grieves me in my honey-trade—mostly a family trade—is that the millionaires can not be charged enough so that they will feel that they are getting something. I would like to see the poor man that has to look after the pennies charged the small price; but I would like to charge the millionaires enough to make them feel they were getting something good.

Mr. Baldridge—I have sold some honey, but I never had but one price to white or black, rich or poor.

Mr. Moore—Wholesale or retail?

Mr. Baldridge—Retail. I never had but one price in my existence, and I

do not see the necessity of having more than one price.

Mr. Arnd—In selling honey, I think, in order to protect the people that resell it—to the private trade you ought to charge more than you do to a man who expects to sell it again. I charge two prices for honey, and I charge three prices for honey—to the man that buys in large quantities by the ton; to the man that buys a few cans at a time; to the man that buys it to eat on his own table. To the man that buys it for his own table I sell at such a price that another man could buy honey of me and sell it to that same man at the same price I sell, and yet make money.

Mr. Wilcox—My trade is a wholesale trade. We sell none to families nor to jobbers to sell again to groceries, of any consequence. I have one price for everybody, and if the prices change I charge each man the same thing; even though they may have agreed upon a higher price, I give them the same price that I charge others; and I know from several years' experience that it will be best in the long run to do so. They will sooner or later discover it, if you are charging them more than you are charging others, and it will surely injure you in the end. It is not fair, it is not honest; it is not good policy—and that is the question—to have different prices for customers of the same class, for the same class and kind of honey.

Mr. Moore—That is the point.

Mr. Wilcox—But, of course, there is one trifling exception. If you have a customer that you are a little in doubt about, whether he will ever pay or not, you can charge him a little more, and perhaps he will go somewhere else.

Mr. Arnd—That remark of Mr. Wilcox's is, I think, well put. He says "the class." Now the man who buys a gallon of honey to eat on his own table ought to pay more than Mr. Wilcox or any other bee-keeper that wants several cases; and in order to protect the man who buys the honey and sells it again, we have to charge the retail man more.

Mr. Wilcox—The difference is, you class the customer and I class the honey. I spoke of the same class of honey.

Pres. York—While we are on that question, here is one that touches it a little bit: "Should not the bee-keeper be compelled to guarantee to the broker

or buyer that his honey will stand the pure food law test?" How many think he ought to be compelled to guarantee it raise your hands. None. All who think the producer ought to be compelled to guarantee. About 15. It looks as if we all did, who care to vote.

Mr. Taylor—The question in my mind is, What good would it do if they guaranteed it?

Mr. Wilcox—In Minnesota they are forbidden to sell it without it is marked as the producer's honey, and that is a guarantee without anything more on it.

Mr. Thompson—This question I believe was discussed here once before, as to what constituted honey that would stand the pure-food law test. That is the question I had in mind—how the producer is going to be able to guarantee his honey other than that it is gathered from natural sources. If honey-dew brings it into the class where it could not be guaranteed, how is he at all times going to be able to guarantee his honey?

Mr. Taylor—He guarantees it and runs the risk.

Mr. Meredith—I would like to have Mr. France give us some suggestion in regard to how to tell honey when it is pure, or any other information on that subject that he can give.

Mr. France—That is part of the constitution of the National Association; one of the planks in the platform is to prosecute adulterators of honey. I began investigating that side of our platform, and I found that honey varies greatly in different localities; it varied greatly in the same locality, according to the conditions in which it was gathered. Then I began to try chemistry to know where to get a basis to work on. I am sorry we have not yet attained satisfaction in that line. I went down to the Eastern States to see the chemists at the time of the United States Chemist Bureau meeting, as to the definition of honey. They were going to throw out entirely all forms of honey-dew, and it was on my pleading that that part was put therein. I can imagine a bee-keeper might be honest in the belief that he was selling a good grade of clover honey, and it would not all of it stand up to the test, the way they were giving it. So the definition has been modified. The only thing I know that we can do at the present time under the new food

law, which will go into effect January 1st, is to keep our bees as near as we can where they will store the sweet that they get from the field; and if we find that they are gathering honey-dew, save it by itself and sell it for what it is. We will have to do the grading more than any one else. If we know our bees are gathering honey-dew, let it go as honey-dew, and sell it as such. There are always people in my locality who want to buy poor or cheap or dark grades of honey. They like to buy the "lasses" for the children, while they have something better for the older folks. They will buy honey-dew if you tell them what it is; but sell it for what it is. Then as a help to our National Association members, especially, how can we then protect ourselves under this point which Mr. Arnd brings up? When I send him honey, he, as a dealer, has to put up a guarantee to sell my honey. How is he going to be safe in his guarantee? He ought to have a right to fall back upon the producer, and the producer simply guarantees it as the product of the bee. When they go beyond that as to proof that it is from flowers, I question if we have anything yet that is satisfactory; chemistry is weak on that point.

A Member—Do the chemists know it?

Mr. France—Yes, sir; the chemists are aware that they are weak on the point of a positive proof of strictly pure honey from the nectar of flowers or exudation of plants gathered and stored by the bee.

Mr. Meredith—What is the definition of the word "honey-dew" from a bee-keeper's standpoint?

Mr. France—As a bee-keeper understands it, it will be the exudation of insects gathered by and stored by the bee in the combs. Some one was speaking about the little white aphids upon the soft maple. We found a good deal of that in Wisconsin, in the last 2 or 3 years. The little white aphid is destroying the maple-tree. The bees are working upon the leaves, and it was in places, too, where clover was coming in enormously, and it was in many places mixed in the extracted honey. We can not separate it, but must sell it for what it is.

Dr. Miller—Mr. President, will you read the question again?

Pres. York—"Should not the bee-keeper be compelled to guarantee to the

broker or buyer that his honey will stand the pure-food law test?"

Dr. Miller—I suppose that depends upon circumstances. In some cases the buyer would require it. If I were a buyer and wanted the bee-keeper to stand back of me, I would expect him to do it. In some cases I do not think I would want it. For instance, here is a dealer that wants to put out honey under his own brand, and he receives his honey, puts it up in packages himself. He can not keep the bee-keeper's guarantee upon the packages, but the bee-keeper's guarantee can stay on a package that comes from that bee-keeper only, and when that seal is broken his guarantee does not amount to anything upon it. If the dealer wants to sell it with that original guarantee on it, then he would want the bee-keeper to guarantee it. The thing, you see, will be complicated; but I think I can see that there might be some advantage in that, too. There is the disadvantage of the objection the dealer would make to it. He would say, "I want to sell my honey—I don't want any other man's name upon it, because I want the advantage of all the reputation I get from it." On the other hand, there might be this advantage. There are people who would buy honey more readily with the guarantee of the bee-keeper upon it, just because they knew who the bee-keeper was that it came from. Then, again, there are others that would buy from the dealer because they would know the dealer, and would depend upon him. So you see the thing has a good many different bearings. I would say, in answer to that question, that any honest bee-keeper would be willing to guarantee his honey. He might guarantee it to the dealer, even if the dealer chose to break it up and put it in packages of his own. I do not believe that I would ever sell honey to any man that I would not guarantee was all right.

Mr. Arnd—I asked that question, so that a dealer could trace back, and if he is "held up" he can go back to the next man, if he buys it from a dealer, and so on to the bee-keeper.

Mr. Abbott—I would like to say that the producer could not ship it unless he guaranteed it to the railroad, under the interstate commerce law.

Mr. Arnd—As being pure honey?

Mr. Abbott—Yes.

Dr. Bohrer—I voted in favor of re-

quiring the bee-keeper to guarantee the purity of the honey. I will do that, and I have now ordered labels, and as long as the package upon which I place the label is unbroken, I will guarantee it to be absolutely pure as the bees stored it in the combs; but if the dealer that purchases it from me breaks that package and repacks it, I won't agree to be responsible any farther.

Mr. Moore—I have been making quite a number of calls on the grocery trade, and in every grocery I am met by the question, "How do you know this is pure?" And it was suggested here that we voluntarily offer to guarantee our honey. That is good business sense. You must not wait until they come with a club and make trouble for you, but you must meet them more than half way about these matters. For my own special trade I have gotten this up; at the top is my heading, you see: "I hereby guarantee my honey to be pure at all times, in all sized packages, and to comply with all new and old pure food laws." I sign this and hand it to my customers, saying, "There is your guarantee," and it satisfies every one. In the absense of anything better, I shall continue to use that, and I am inclined to think that it covers the ground.

FOUL BROOD LAW.

"Is there a foul brood law framed to send to the legislature this term?"

Pres. York—I suppose that means the Illinois legislature, or it may perhaps mean any other State that has a meeting of the legislature the coming winter.

Mr. Moore—The President of the Illinois State Bee-Keepers' Association, Secretary and the Treasurer, are an executive committee who have charge of this, and they, in conjunction with some of their friends who are in close touch with politicians at Springfield, get up the foul brood law—or the bee-keepers' law, more correctly speaking—and have it introduced by some of their friends in both the House and the Senate. I don't know definitely what has been done.

Pres. York—I don't think that is an answer to the question, Mr. Moore. The question is: Is there a foul brood law now framed to present to the legislature?

Mr. Moore—I do not know of anything being done, but I know that Messrs. Smith, Stone and Becker have at-

tended to heretofore and probably will attend to it in the future.

Pres. York—The committee of this Association is Mr. Dadant, Mr. Wilcox, and Mr. McCain.

Mr. Wilcox—No member of the committee has said anything to me about it. I have not heard anything about it from any other source, or done anything about it myself, and I rather doubt the propriety, myself, of making any application to the Illinois legislature. I might join with the Illinois members, but I do not think the legislature of one State is in the habit of listening very much to people from other States, unless concerning some matter in which they are particularly interested.

A Member—You will remember, at the last meeting, we came to the conclusion that this matter better be done by the Illinois State Association, and this committee was appointed to work with them.

Pres. York—I think we ought always to remember that this organization covers a number of States, and that we ought not to help one State more than another represented here. Perhaps hereafter it will not be necessary for us to have a foul brood committee. We decided not to join the Illinois State as a body, and of course all of us will not be members hereafter; but there will be individual members that live in Illinois. So unless this body moves to have a committee appointed, or continues the present foul brood committee, I suppose it will not be continued. Whatever a majority of this Association says, of course, will be done, because we decide things by a majority vote. Now is there anything else on the question?

Mr. Moore—I believe it is best to take some action on the foul brood committee. I think the committee would better make a report and be discharged. I do not think any good can come of its further continuance. I would advocate, however, that as individuals we write letters, every one of us, to the members of the legislature in favor of the law that is introduced, because it is no doubt better to have a half loaf than nothing, and the thousand dollars the legislature gives the bee-keepers in this State will do them good.

Dr. Miller—I believe Mr. Moore has the right view, and, in accordance with that view, I move that the foul brood

committe of this society be discharged, with thanks.

The motion was seconded and carried.

It was moved, seconded and carried, that the President appoint a committee of three on resolutions.

Pres. York—I appoint Mr. Hutchinson, Mr. Abbott and Mr. Whitney as a Committee on Resolutions, to report tomorrow.

FOUL BROOD.

"If foul brood is not foul brood, then what is it?"

Mr. Taylor—Something else. [Laughter.]

Mr. France—I imagine what conflicts here is the fact that the Department of Agriculture at Washington has come against this proposition. What has been known out here as foul brood is entirely a different disease from that which has been commonly known as black brood in New York State, and those two have conflicted, and the Government has been taking this matter up and decided to call both "foul brood," but to add an adjective to it, so that what is known through our country here largely as foul brood will be called "American foul brood," and the so-called New York black brood will be called "European foul brood." Unless this change was made, the laws now in existence in nearly all the States that we have upon foul brood would have to be modified; we have gone through with hard work enough to get it, and to have to do it over again would mean a good deal. So the Department has aranged it in that way. We have the two distinct diseases. If any of you have not read carefully Bulletin 79 from the Department on "Brood-Diseases"—on both European and American foul brood—I have asked that it be put in this year's Annual Report of the National, where you will have it on file and can read it.

Mr. Moore—That is my question. If foul brood is not foul brood, then what is it? If I can read correctly, it says that the *Bacillus alvei* is not found in foul brood, or American foul brood, to use this nomenclature. If that is true, what becomes of Howard and other scientists who say that the *Bacillus alvei* was the characteristic? We have not heard from them. We have not heard the last word. Have they all been mistaken? and what has become of the

American foul brood, or the old-fashioned foul brood, as we know it?

Mr. France—In the demonstrations that Dr. White, from Washington made, there was this marked difference: Our American foul brood would not develop on the same cultures as the European foul brood, showing a decided difference between the two. The New York black brood or European would develop nicely upon beef as a basis, whereas our other will die—make no attempt to live.

Mr. Moore—We have been accustomed to thinking of *Bacillus alvei* as the germ of foul brood. Shall we think of *Bacillus alvei* as the basis of black brood?

A Member—Exactly.

Mr. Moore—What takes the place in American foul brood that was occupied by *Bacillus alvei*?

Mr. France—*Bacillus larvae*.

Dr. Miller—I am not sure whether I understand this thing or not. It looks to me a little as if you were mixing two different questions. The first is in regard to European and American foul brood, and then there is another different question in regard to *Bacillus alvei*.

Pres. York—*Bacillus alvei* is the same as the New York black brood or European foul brood—all the same thing.

Dr. Miller—It seems to me I understand that it was decided that *Bacillus alvei* was an entirely innocent party, and had nothing to do with either of them.

Pres. York—I think that is wrong.

Dr. Miller—*Bacillus alvei* is the European foul brood?

Mr. France—Yes.

Pres. York—And *Bacillus larvae* is the American foul brood.

Mr. Moore—I want to press this right home. If in the past all of these scientists have been mistaken, who have held up *Bacillus alvei* as being the germ of foul brood, and we believed them, and then somebody comes along and says we are mistaken, is our authority good enough to make us throw away all we had in the past and say *Bacillus alvei* is not in it at all?

Mr. Taylor—I think there is no doubt that they are right as far as they have gone. The trouble with Howard and those other fellows is that they relied on a single test—I suppose on a microscopic test—and I judge that the two *Bacilli* are alike in appearance; but now

these men at the head of our interests in the Government have applied a new test. They have applied the test of different kinds of culture to these microbes, and they find that the beef culture will enable the *Bacillus alvei* to propagate and to increase, while if used with the other *Bacilli* they perish, showing conclusively by this new test that they are two different *Bacilli*.

Mr. Kimmey—If I understood what Dr. White and Dr. Phillips were trying to explain to us at the Bee-Inspectors' convention at San Antonio, it was something like this: The European foul brood was examined and they believed that the cause of the disease was the *Bacillus alvei*, and traced it to that. When we got a disease, without making any examination we called that "foul brood." Then another disease sprang up which we called "black brood." Upon making the scientific investigations which these men directed, they failed to find *Bacillus alvei* in our foul brood, but they did find it in black brood, so they came to the conclusion that what we had always called black brood was really the European foul brood. In order not to confuse the names, they then decided to call our foul brood "American foul brood," and the black brood "European foul brood"—the one having the germ *Bacillus alvei*, the European foul brood; and the American foul brood having the *Bacillus larvae*. In order not to rob the European people of their honor of discovering that, they called that the European foul brood which was formerly our black brood, making two distinct diseases.

Pres. York—Our foul brood they call "American foul brood," but the European foul brood happens to be the same as the black brood they have in New York and a number of other States.

Mr. Kimmey—So we will drop the name "black brood" entirely.

Mr. France—I got quite interested in this subject the past summer, and I asked Dr. Phillips upon his return from California to come to my place. I wanted to investigate this subject of black brood or European foul brood, as I understood it was approaching. I was attending a meeting of some of the inspectors at Milwaukee, and decided to take a train and go to Michigan, where we could find the European foul brood. We had no microscope, but from the appearance of the brood itself

—the dead larvæ—it looked decidedly different, so that the naked eye could tell, after once seen, the difference. With the black brood, if there are larvæ at an earlier stage they turn dark, almost black, and flatten right down on the bottom of the cells, whereas the American foul brood becomes a brown, ropy, putrid matter, and lies upon the side of the cell, and becomes stringy in its nature. The European never does that. As for the odor, there was a marked difference again. Our common foul brood has what we call a glue-pot smell, the other had not; not much of any odor, but what there was, as near as I can remember, was more like sour pomace from a cider-mill.

Mr. Kimmey—Allow me to ask Mr. France these questions: Is the American foul brood prevalent in Europe? Do they have the two diseases there?

Mr. France—They have them both.

Mr. Kimmey—What do they call them there, do you know?

Mr. France—As far as I know they call them foul brood. That is why there has been this trouble. We found, by referring to scientific researches in Europe, that they had made scientific cultures of them, and examined them, and got conflicting results, examining one and then another, and were misled by the name.

Dr. Miller—if you will allow me to answer Mr. Kimmey's question, I think they distinguish them as the mild and severe.

Mr. Thompson—I would like to ask if the treatment of both is the same.

Mr. France—Not exactly, although the thorough treatment as has been described, taking away the infected combs, will cure either one.

Dr. Bohrer—Speaking about the odor of the foul brood as we find it in this country, it has been compared to the smell of dissolved glue. I want to say, from my experience, it is that way, only more so.

INSPECTING APIARIES IN COOK COUNTY.

"Was there a foul brood inspector around this summer to inspect the apiaries of Cook County?"

Mr. Moore—I believe there was not. I acted as foul brood inspector for only one season, and I think Pres. Smith, of the Illinois State Association, is the only one who has acted as inspector of apiaries since then; and Mr.

Smith has had the work of eight men on his hands to cover this State, so naturally, he could not cover it all. As far as I know, he has not been in Cook County at all.

Mr. Thompson—He was in Kane County.

Pres. York—He generally goes when he is sent for.

Mr. France—There have been sent to me samples of diseased brood and dead brood from almost every State, and there have been some samples from Cook County sent me and some sharp criticisms because I did not say it was foul brood; but it was not.

Pres. York—What was it—pickled brood?

Mr. France—Some of it was. Some was starved brood, and some had indications foreign to all of us as yet.

Mr. Moore—Was there any black brood, Mr. France?

Mr. France—No, sir; but I was surprised to learn from Dr. Phillips that he had found cases of black brood in Illinois, Ohio, Michigan and California. European black brood is spreading.

Pres. York—And of course in the East, besides?

Mr. France—Yes.

Dr. Bohrer—Has Illinois no foul brood law at all?

Pres. York—It has a foul brood law, but not a compulsory law. It is at the option of the bee-keepers whether they will let the inspectors in their apiaries or not.

DISTANCE OF APIARY FROM HIGHWAY.

“How far should an apiary be from the highway?”

Mr. Meredith—Just far enough not to interfere with the public.

Mr. Taylor—That reminds me of a story. There was a gentleman in England who desired to hire a coachman, and so he advertised for one. He wished any candidates there might be to appear at a certain time. Several appeared and he began to question them, and wanted to know how near they could drive to the edge of a cliff there was upon his estate. The first one said he could drive within a yard of it; another one said he thought he could drive within a foot of it safely; and the next one thought he could drive within an inch of the edge. The last man, an Irishman, said, “Faith and be

jabers, I would keep as far away from it as I could.”

Dr. Bohrer—There should be a high fence, 6 or 7 feet. I remember having an apiary of about 100 colonies in Indiana, and I had them just over a fence from a public highway and the bees never annoyed people passing on the road, with a fence some $6\frac{1}{2}$ feet high. They would go over that fence and go over the heads of persons in buggies and on horseback; I never knew any one molested.

Mr. Arnd—Mr. Duff, who is here, has 150 colonies right in the city of Chicago. He can probably tell you.

Mr. Duff—I can keep bees within about 10 feet of the street; but I have a 6-foot fence so the bees rise up and go right over.

A Member—My bees are within 50 feet of the sidewalk and I have no complaints. I have only 3 colonies, but I notice they rise very quickly. They are up 10 or 15 feet in the air in 20 feet of flight. The sidewalk is running north and south, and my hives face the east, but the bees go to a marsh straight west from me, and simply make a little curve.

Mr. Moore—I know Mr. Horstmann so well, and I know he won’t take any offense when I say he has had some experience. The Health Department ordered him to “get off the earth.”

Mr. Horstmann—The bees that the city got after were not at my home apiary; they were in another apiary. They had a little trouble with the family there. I had my bees on a man’s lot, and it seems this man and his neighbor had a little trouble, and the only way they could get satisfaction was to get after the bees, so I got notice from the Health Department to move the bees out of there; but I had that all fixed up, and left the bees there until I got ready to put them away. I wrote to Mr. Moore, and I believe I wrote to Mr. France at that time, too, for some literature. I thought I might have to bluff the city, but I didn’t have to do that. I had a friend look after it, and we left the bees there until I got ready to put them away. The bees are not dangerous. Where I live I have bees on the corner, and people passing on the sidewalk every day, and they are never molested. The women-folks hang up their clothes and the children play all around the hives, and they hardly ever get stung. It is not so much the distance as it is the

kind of bees you have. If I find a cross colony of bees I do away with that queen and get a more gentle strain of bees. I admit that among the bees I had at my out-apriary were some pretty cross ones, and, of course, not being on the place, I did not know where the cross bees came from; but at home I can tell, and pick them out, I think everybody should look after the bees, and then there will be no trouble.

Mr. Taylor—I think we can not be too careful with our bees in this respect. It is not altogether safe to rely upon a high fence. Bees do not always sting intentionally, often unintentionally. I know of one instance. I had started to go down town, and I had some bees some distance back from the highway. The bees flew across the highway to a pasture beyond. I suppose they went high enough when they went away, but when they came back heavily laden it was quite different; and as I was driving down a bee came and touched me on the eye, and of course eyes have a habit of winking in such cases, and the bee stung me. Now it is easily imaginable great damage might be done just from stings received in that way. Bees might get into a horse's mane, or about his eyes, and cause a runaway. You can not be too careful. There is no need of playing with bees and putting them as near the road as we can. We better be like the Irishman and get them as far away as possible.

Mr. Thompson—I had about 75 colonies behind a fence right near the street, as Mr. Duff speaks of, and I want to ask him if he ever experienced a nervous feeling when he heard a child cry when he was not right on the ground?

Mr. Duff—I never heard them cry.

Mr. Moore—Mr. Pease has had charge of an apiary opposite a public school in Ravenswood, and I have heard people say that their families are being stung to death by those bees!

Mr. Pease—I have had charge of 100 colonies of bees, and about 85 feet across the street is the school. When I first located the apiary at this place I had some little difficulty, not so much with individuals as with an organization that had the idea that we were to establish a manufacturing plant at that point, and they did not propose to take any chances. A committee was appointed and waited on me, and I was notified to cease erecting a fence and apiary house

which was being constructed; that I was going to needless expense, and that it would only have to be torn down. I disregarded that and went on with my work, and after the first week or 10 days the school children seemed to get accustomed to the bees. Nobody was stung that I knew about at that time, but a gentleman who lived some 2 blocks away had been very greatly annoyed with them, and he complained to the Department of Health. An officer came out. I showed him through the apiary, answered all the questions he asked, and possibly volunteered some information for his benefit. He said, "I will have to send in a report, but it will be one that won't hurt you."

Mr. Moore—Did he have a veil on in this inspection?

Mr. Pease—No, sir; he did not. He went through the yard with me, neither of us with a veil. I opened several hives for him. I heard nothing more from that source, and the only serious case of stinging that I heard anything about was from a little girl who was stung through the sole of her shoe! [Laughter.]

Mr. France—I see in looking over the work of the National for the year just closing that there are 18 different places where bees in cities have been attempted to be declared a nuisance and ordered removed, and 2 which were ordered removed. Now there is a cause for all this. One team was stung to death quite a distance away. The road was 225 feet from where 150 colonies were. The man that operated the bees had extracted them, and they were unusually cross. It was out of the honey-flow season and they had become so cross that he was compelled to put protection on his hands as well as his face to finish the work of the day. There was an irrigating ditch by the side of this road; the banks began to give way, and men were sent out to repair the ditch. They had to leave on account of the cross bees. The consequence was the water broke the banks, ran over the land, and the laws of the State make the irrigating company liable for all damages of the water when it is out of its channel. The next morning a team loaded with grain, passing this road, was met by a quantity of cross bees about 300 feet away. By the time they reached where the water run across the highway, making a mudhole, there were a good many

bees on hand, and the team was unable to pull the load out of the mud; before they could get them away both horses were stung to death. The man was compelled to get into the mud and smear himself over, to save his own life. The team cost \$225 and the harness \$25, and the case came up. Should they carry it into the court or settle it? I am a compromise man—believe in settling every time and keeping out of the courts; the further you carry it the worse it becomes, as a rule, and I advised them, by all means, to settle in some way. I got a letter last night that upon receipt of my letter he had taken it over, at my request, to the party losing the team, and had read him the letter, and rather than go into court, he had agreed upon a compromise settlement of \$195. There is also a counsel fee of \$2.50, making \$197.50 as a settlement. Now he wants the National to pay the whole bill. We have a great many so-called city bee-keepers that are keeping bees. A few colonies will bother no one, but when you come to develop that into a good-sized bee-yard it is a different condition of affairs, and I have had some pretty trying times to get excuses and help some of our members when the bees—although there might be a high board fence—made trouble. The individual lay of the ground at each place cuts a great figure. There may be a high board fence, and if the lay of the land is such on beyond that the bees drop over the fence, and soon get to the ground again, the fence is of little protection. I think it is a case for each individual bee-keeper, if he learns the bees are making an annoyance, to make amends at once to those who have grievances. Let us exchange our position with the one who has the grievance, and would we like to have the bees spoiling the clothes in the spring, and so on, as they do in the cities? Would we like to be compelled to hitch up our teams early in the morning and shy around because a neighbor has bees? I stopped at a hotel not long ago, where the landlady said, "I would gladly give you your board if you would tell my neighbor how to keep the bees out of the pump." I said, "That is easy enough. A piece of cheesecloth will keep the bees from going in, and it will strain the water and make it cleaner."

Mr. Moore—I want to say that carbolic acid smeared around the edges of

troughs where bees congregate is very disgusting to them, and has been used to good effect.

Mr. Kimmey—I tried it and it did not work.

Mr. Moore—Probably you did not have it strong enough; 95 percent solution—what they call pure?

Mr. Kimmey—Yes. I got over the difficulty by putting a barrel of salt in their place. We laugh, of course, at stories of stinging through the shoe and all that, and wondered on second thought whether that really occurred or not, whether anybody was so foolish as to make the complaint. But, after all, it seems to me no one should put colonies of bees 85 feet from a school and expect to keep out of trouble. I know, as this gentleman says, there are times of season when you can go into your bee-yard, and have children play around the bees, and everything is lovely; but I also know, as far as my experience goes, that I never have seen an apiary of 12 or 15 colonies but what a child at some time of year was stung and went about yelling, "I hurt myself on a bee!" and the mother ran with arnica, and there was trouble. I shouldn't want to set myself down with 100 colonies of bees within 80 feet of a school-house or a highway. It seems to me, as bee-keepers, we ought to be more careful, and put ourselves in the place of the other fellow, and see if we would like to be treated that way. Where I have my bees, although I am at least 100 feet from anybody, surrounded by a green-house on one side and a grove on the other, and at least 150 feet from the street, yet I am in fear every day that I may have some trouble. A year ago last spring, when I put my bees out, a neighbor said, "Mrs. Turner has had trouble with her water. Her clothes are turned and she thinks it is iron rust." I walked over, and I said, "Mrs. Turner, I know what is the matter with your clothes." She said, "I wish you would tell me." I said, "I put my bees out. If you will take those clothes and put them in water and wait until tomorrow to hang them out, and send me the bill, I shall be glad to pay the bill." "O, that is it?" "Yes," I said "that is it." "O, it is nothing at all. It only makes me a little trouble, and perhaps they will be the better for a second rinsing, any way." I only say this because I do not

wish you to think that I acquiesce that you can set bees down near a school-house or where people hang their washing out. I think if you have 150 colonies in the city you would better move into the country.

Mr. Moore—I was brought up in Evanston with bees. In the eyes of bee-keepers it is a kind of joke for anybody to get stung. At our house we have two boys, and I take a frame out and say to the boys, "Look here. Run for your life!" They get stung 3 or 4 times a week and they take it as a joke. I was out at my brother's the past summer, and he and I went in and took the honey out and we got stung 10 or 15 times around our ankles. We did not mind it because it did not affect our blood at all. It did not poison us. But I want to tell you I have inspected bees around Chicago a good deal. The public think they are like snakes; they are deadly afraid of them; and although it is a joke with us it is serious to those folks. I want to bear down hard on this: A pound of honey will smooth over a whole lot of bee-stings, and whenever anybody complains, you want to do the right thing, and do it quick. Then you won't get unpopular in the cities. Otherwise you will, and they will put you out of the cities if they get after you really in earnest. You may say you have the Supreme Court of Arkansas, and all that, to show that you can not put bees out of the cities, but I say they will put you out quick if they set their minds on it.

Give them a pound of honey; keep them good-natured. Use your judgment. Some places you must be 80 rods away from the highway. Other places you can have them close to the highway. Have their flight the other way. Some bee-keepers are foolish enough to have their flight towards the road.

Dr. Miller—One point Mr. France made, I am afraid possibly might be misunderstood, and might be misused. As I remember, he said with a few colonies it is one thing, but with many colonies it is a different matter. Some one might take from that, that as long as he had one, two or a half-dozen he might put the bees up close. I remember one year my bees seemed to be very cross—stung a great deal. A very close watch discovered to me that it was one particular colony in the apiary, and only that one, and of course Mr. France

knows that as well as I do. When I changed the queen of that colony the cross bees disappeared in a little while. Suppose I had only had one colony and it had happened to be that cross one, I would have been as bad off with one colony as with a hundred. So don't count too much on it that you are safe because you have only a small number.

Mr. Pease—I wish to answer one question of Mr. Kimmey's in regard to the apiary I spoke of a few minutes ago being across the street from a school-house. That particular yard is not run for comb honey. It is run for the production of bees, the colonies being, you might say, weak. I do not suppose there are over a half-dozen colonies containing the full number of frames (8) in the whole yard. Another thing, I do not tolerate a cross colony. I simply pull off the head of the queen, and requeen, and I find that eliminates the trouble. I find also, or I verily believe, that 100 colonies of bees can be taken care of in a manner which will be a far less nuisance to a locality than under some conditions a half-dozen colonies improperly treated. In regard to the school, and in regard to the present locality, the very best friends I have in that neighborhood are the scholars and the teachers, and there are no complaints, and have not been, from the immediate neighbors, who, I might say, are a half a block away.

I have trouble sometimes by bees being made cross by boys. Boys like to shy stones at the bees, and very often that makes them very ugly, and I think you have an ugly colony of bees when stones have been thrown at the hive, just as they would throw at bumble-bees' or hornets' nests—just throw quick and then run.

Mr. Thompson—I would like to ask Dr. Miller how he is able to locate a cross swarm in a yard of 150, for instance.

Dr. Miller—I never had 150 in one yard, but I owned one yard of 125. When I go along and come close in front of a particular hive and 15 or 20 bees come out full blast at me, I think they are cross with me; and when I find that the same thing occurs every time I go by that hive for a week or two, I settle down that that is the one, and that queen suffers.

Mr. Kimmey—I bought 5 nuclei and I put them in the yard. They were the

first I had, I think, and the next day I went to examine them. You don't know how proud I was to handle them without smoke or bee-veil. The next day I undertook to show some one how nicely I could take them out without the bee-veil or smoke. I didn't take them out. I went and got the smoke and bee-veil. That has been my experience ever since. Sometimes I can do anything; sometimes THEY can do anything. I have been thinking of your having bees in a small lot where you neighbors are around. Don't your bees ever act like that, especially in the fall of the year? Don't they get ugly as mine do, so that it is not safe to go within 40 or 50 feet without danger of being stung? I am like Mr. Moore. I don't mind a couple of thousand stings. I would not like to be stung to death, of course. But I have a son-in-law who was stung once, and he says he would not keep the blamed things around. I imagine there are lots of other men, and lots of women and children who feel that same way. I do not know but what you can rear bees for breeding purposes; never let them get strong; keep them always weak; and not have them sting. I do not know but what you can, but I should awfully hate to try it, and I don't want to back anybody else up. My voice is for being careful, and, if you have trouble, put yourself in the other fellow's place.

Mr. Taylor—I just want to make one suggestion, and that is this: I think that we ought, just as soon as we possibly can, to learn to know when we can handle bees with impunity. A bee-keeper after he has had considerable experience will learn, as Mr. Kimmey has done, that he can at one time handle his bees with no appearance of anger on their part, and at another time they are full of vengeance. One can learn with a little thought and care just what to do in his apiary, and to get along without ever angering them. I have not for years had any trouble in my apiary in any way. Of course, it would be a little more difficult, perhaps, if I were producing extracted honey, but with comb honey there is no necessity at all of stirring up your bees. If you only use good common judgment in handling them, and the time when to do it, there is no necessity to do it.

Mr. Kimmey—I was talking of my early experiences. I think I have now

learned those things. I think on opening a hive I can tell whether they are going to fight or not. I know I can tell by the smell when they begin. But while I may know, how are the neighbors and the children to know?

Dr. Miller—There is another point. Suppose I know enough to know exactly how the bees are going to act, by the way they behave, by the odor or something like that. Suppose I go off 5 miles to do some work? The only thing is to have the bees off where they won't bother anybody. City bee-keeping is one thing, and country another. If I were in the city with the bees I have now I would not keep them except in the center of the block, and I would have blocks consolidated into one. One point should be emphasized for the city bee-keeper: Gentleness of character is of first importance; if they will gather only half as much honey, to have bees that are gentle. If we are away off in the country it doesn't matter so much.

Mr. Wheeler—I would like to make one other point; that is, a good smoker. It is worth more than all your breed of bees. Do not fool around with a cheap smoker which many people get. They buy a smoker that costs very little—a quarter, or something of that kind. It will go out and bother them. They would better spend a little money for a good smoker, and go at the bees and frighten them well, and they won't sting.

WOMEN AS BEE-KEEPERS.

"Would you advise a woman to keep bees? Would she be equal to it?"

Mr. Taylor—It would depend upon the woman.

Pres. York—I think perhaps Miss Wilson can answer that.

Miss Wilson—That would be my answer. It would depend upon the woman.

Mr. Wilcox—It might be proper to say that because she is a woman is no reason why she should not keep bees. If she has the strength and the inclination, she can keep them just as well as a man.

Mr. Whitney—I have had a little experience in giving women some instructions in handling bees. There are quite a number in Lake Geneva and they are quite successful. They have no trouble in handling them at all, and I think they are more gentle in handling bees than men are. Although they may be of a nervous temper they handle the bees

very carefully, without any trouble at all. We know from what we read in our journals that there are very successful bee-keepers among women all over the country.

Mr. Abbott—I think there is no reason why she would not do anything because she is a woman, if she knows how, and wants to. She can keep bees or run a farm, or a livery stable, or a barber shop, or anything she wants to. Some women could not keep bees at all. I don't think my wife could keep them long. If she had a colony she might keep them a good while, because she would not go near it. I do not think there is money enough to hire her to examine a colony of bees. She is timid about it, though she will run my business when I am gone, look after 5 or 6 head of stock, and do anything else, though she can't keep bees. A woman like that would better let them alone. But it seems to me it is an industry peculiarly adapted to women who want to pick up a few dollars for spending money to use as they will. There are only a few husbands who seem to think women need any money except what they dole out to them. But on the farm, if some girl in her teens takes up the study of bee-keeping and studies it with great patience, she can soon have an income coming in and be independent of her father and her folks. It is quite easily done, especially on a farm. Of course it can be done in the city if you have room enough. I know a number of girls who get all the spending money they want. I know one lady—a widow, who for years had just 12 colonies. She would let her bees swarm, and then she would double them back and in the spring she always had 12 colonies. She has been getting all her spending money for all these years; bought her own clothes, and had whatever she wanted and was independent; notwithstanding she inherited a good deal from her mother, she didn't have to ask her brothers for anything; made it all out of the bees and a little poultry. I know a number of such ladies, and I don't know any reason why more should not do it.

A Member—I think a lady bee-keeper is just as good as a man. I know a lady whose husband was a cripple, who made \$150 a year, and it was quite handy to her. I think she handles them better than I do.

Mr. Taylor—An old gentleman used to come to my place and get pointers on bee-keeping. He complained that his eyesight began to fail him, and it was hard to deal with his bees, look them over, find queens, and so on. One day I came there and he said, "I have been getting married. My eyesight was so poor that I thought that I would get some one to find queens for me; but she can't find them any better than I can."

Pres. York—I think we ought to hear from Mrs. Meredith before Mr. Meredith on this question.

Mrs. Meredith—She probably can give you some information. She had 100 colonies the past summer.

Mrs. Meredith—I am not much of a speaker in public. I can tell you that I like handling the bees very much, and I think I could do it quite successfully.

Pres. York—Miss Meredith, I think, looks as if she wanted to be independent, as Mr. Abbott was saying.

Miss Meredith—I haven't any bees, though! [Laughter.]

Dr. Bohrer—My observation is that the ladies are a good deal like men. If they are adapted to the business, and have a taste for it, they become just as expert as men. I used to be a bee-keeper in Indiana and had quite a correspondence with both ladies and gentlemen who kept bees. I found the women eminently successful. They couple them with poultry, perhaps, or some one who took in sewing or washing owned a house and an acre or two of ground kept a few colonies of bees, and the bees coupled with poultry and other labor, made an excellent living, a very nice little income, and there are thousands of ladies that I am satisfied if they were encouraged to take hold of the industry would be successful. Francis Huber's wife was his principal helper in his discoveries. I have some daughters that are married now, not at home; they do not keep bees at all. But I have one that does a whole lot harder work. Her husband is not a strong man. She will order him to stay at the house and do something in the shade, and she will go out and drive a 4-horse plow, and do that and help him raise 4000 or 5000 bushels of wheat in one year. I think with proper surroundings she would take to bee-keeping. As a child she could pick out the queens as quickly as I could; help carry the frames from the extractor and back again;

and could have been a manager of an apiary if it had been necessary and a duty that fell to her. I believe it to be the duty of every bee-keeper throughout the country to encourage the ladies in every way to engage in the business. Not to buy up a large number of colonies to begin with, but take one colony, study their habits carefully, read a bee-paper and some of the standard works on bee-keeping. Women are just as apt at taking up information of that kind as men are, and there is no reason why hundreds and thousands of women that have not a fair income could not add materially to the little income that they have in engaging in this industry. I am sometimes asked by ladies, "Can I engage in bee-keeping and make a living out of it?" My reply would be, "It depends upon circumstances. If you study the habits of the bee, their stings are not poisonous to you, you keep enough of them—many farmers I think would furnish the ground and allow you to keep a good many colonies of bees there—I think you could not only make a living out of it but make money besides." A great many people can not engage in the industry of bee-keeping, and cannot make money out of it, but almost every farmer through the country can if he will; but they won't do it. They have no taste for it. They do not like bees, do not like their stings—they are susceptible to the influence of their poison; that class of people I advise to let it alone, both men and women. But there are many who can learn it; the stings do not hurt them, and a good many of them can make money out of it if they will keep bees enough. Almost any farmer whom bee-stings do not poison can keep a few colonies and produce all the honey he needs at home.

DEFENDING AGAINST TROUBLESOME NEIGHBORS.

"Should *this* Association defend its members against troublesome neighbors?"

Mr. Wilcox—I should say absolutely *no*, under any circumstances.

Pres. York—I might say that there are no funds to do it with, any way; and every bee-keeper ought to become a member of the National. That is part of its business.

Mr. Horstmann—I asked that question. This question has been pretty well discussed this afternoon, not ex-

actly talking on that question, but we have been talking on those lines. I say this Association should defend the members. If the Association does not want to defend its members against troublesome neighbors, I say what good is the Association? What is the use in belonging to it, if the Association is not going to be of some benefit to you? I think that in a case similar to the one that I spoke of here this afternoon, it should be investigated by the executive committee of this Association, and if they find, after investigation, that the bee-keeper is at fault he should have no defense; and if they find that the neighbors have been quarreling, and they are only making trouble for the bee-keeper for a little satisfaction, then I say the Association should defend that member.

Mr. Wilcox—I want to say that we have another association—the National—and that is a part of its work, a leading portion of its business—and he should apply to that, and this Association, as an association, should not meddle with that work at all. If we attempted it we should have to levy a tax upon every member sufficient to provide an income for that purpose. It would be quite a tax.

Mr. Horstmann—Most of the members of this Association are citizens of Chicago, and I say that we should stick together. If we could put it on the National Association, all right; but what is the use of our having an Association unless we can be of some use to each other? I say there is no use of it. It is all well enough to come down here and have these talks on different questions. We, of course, are benefited by them. Some are benefited more than others. But we should defend our members in cases of the kind I have spoken of here, I think.

Pres. York—I would like to ask Mr. Horstmann what he means by defending them, if we have no money in the treasury to do it with?

Mr. Horstmann—I did not ask the Association to defend me. I fixed the thing all up; or I didn't myself, but had a good friend that did it. The city would have "fired" my bees off there if it had not been for a good friend.

Dr. Bohrer—if I may give a little experience I had about 35 years ago, I settled it very quickly. A man near me had grape-vines. The juice was run-

ning out of the grapes and my bees were around there. He said I must remove my bees; they were destroying his grapes, puncturing them and taking the juice. I said, "I think you are mistaken. Bees can not possibly do that. Their jaws are not so constructed that they can cut the skin of a grape." He said, "They are doing it." I said, "Have you seen an individual bee do anything of that kind?" "Why," he said, "there are hundreds of them doing it all through my vineyard. You have got to take them away." I said, "If you can demonstrate that they are actually injuring your grapes, it will be right for me to take them away, but unless you can establish that fact I will not take my bees away. I have got the affidavit of Mr. Quinby." I sent all the way to New York for it. "I will get Mr. Langstroth and have him testify in court that not a man of you knows what you are talking about; that it is utterly impossible for a bee to puncture the skin of a grape." Then he consulted an attorney, who called on me in my office, and I showed him the bee through a microscope that magnified about 100 diameters. I said, "Look at it, and if you think it will puncture a grape I will remove my bees." He was a reasonable man. You will find some reasonable men who are attorneys! He said, "Bohrer's statement is true. Your grapes are bursting or being punctured from some other cause. The bees are carrying off the juice." And the matter dropped.

Mr. Wheeler—The drift of the convention sounds to me as if we were not members of the National any longer. Is that the fact?

Pres. York—We are members of the National because we joined in a body, and if we get into trouble we can call on the National to help us out.

Mr. Moore—Mr. France, in this connection, will you say how much the National Association has spent?

Mr. France—In the ordinance line from \$200 to \$300, one year \$400. As a rule, with these ordinance difficulties the bees are not at the bottom of the trouble, but that the neighbors to the bees get in trouble, and complaints and grievances arise, and finally the bees are complained about and an ordinance passed declaring them a nuisance and ordering their removal. That is about

the way those things are led up to. There are many cities in the United States enforcing such an ordinance, and you can not keep bees in those cities, but we haven't it here. As I say, most of these things come from some personal grievance. I recall where two neighbors got to quarreling in that way. The bee-keeper killed the neighbor's chickens, and then he turned around and killed the bee-keeper's cat, and it was back and forth, and a swarm of bees came out and clustered on the neighbor's land on a shade tree, and before they had time to get them out this neighbor took a torch and burned them on the tree. After a while they asked the city to declare those bees a nuisance.

Mr. Wilcox—There is one thing we all ought to understand—perhaps we do—the National Association was not originally intended to defend everybody that was threatened. It was intended only to protect those where it should involve something of general interest to all bee-keepers or to the bee-keeping industry, as in the case of Mr. Freeborn, the first case that ever arose, where the question was as to whether the clover was damaged by having the nectar extracted by the bees. That is a question that affects the industry generally. I have had complaints made that buckwheat was injured in its yielding by the bees depriving it of its nectar. If a lawsuit were brought to collect damages for nectar taken from buckwheat you can see at once that almost every bee-keep in the United States would be willing to contribute, because they are all interested; but where it is a personal quarrel they ought not. If the National Association goes farther than its rules require, as it may sometimes, it will be in a case of that character, where the general welfare of the bee-keepers demands it, not where it is a personal quarrel.

On motion, an adjournment was taken until 7 p. m.

FIRST DAY—EVENING SESSION.

For about a half hour before the opening of the session a quartette composed of Mr. and Mrs. Roscoe M. Stryker, Miss Ruby W. Stryker and Pres. York, accompanied on the piano by Miss Kathryn Kletzing, entertained the audience with bee-songs. Dr. Miller sang also.

CROSS BEES.

"How far from their hives are cross bees likely to volunteer an attack?"

Mr. Wilcox—If you change that word "likely" to "liable," I will say 20 rods.

Dr. Miller—I think it is a variable point. It depends a great deal upon the bees. If I understand the question it is, How far from the hives will the bees volunteer an attack? You may go to a hive and the bees will run after you a great deal farther away from the hive than that point where they would volunteer an attack, supposing they are coming towards the hives; but I understand the question is how far you are safe from a volunteer attack. If you had asked me 20 years ago I would have said that 2 rods away you would be quite safe. If you had asked me last year I would have told you 20 or 25 rods, and I don't know how much farther the thing is going. Really, that is my question, and I am asking for information. I want to know how much that thing will increase.

Mr. Taylor—An old bee-keeper was telling me what an experience he had in the neighborhood of Lapeer, Mich. He had been hunting bees, and he finally found a colony in a hollow elm standing among other trees, and he cut down the tree, intending, of course, to have it fall free from the other trees and gently; but, as luck would have it, it fell with a crash and struck against another tree and splintered it all to pieces, scattering it all over. He said the road was about half a mile off, but you could not go past on that highway without the bees getting after you.

Mr. Duby—I think it depends a great deal upon how you attend to them. The more rough you are with those cross bees, the more cross they are. I believe it is the method of attending to them; the more gentle we are with cross bees, the more gentle they will be.

Dr. Bohrer—My experience is that something depends upon the kind of bees you have.

Mr. Wilcox—Cross bees, the question calls for.

Dr. Bohrer—Some bees are crosser than others, so it depends upon the kind of bees, at last, that you have. If you have the pure Cyprian bee I think it will come for you in defense as far as it can see you in making the attack. I had a colony of them, but I got rid of it as soon as possible. If you have

that kind of bees you may look out. They are on the war-path. When I opened a hive of those Cyprians I had trouble. I could not do with smoke or anything else; nothing short of killing them outright would answer the purpose. Then I took their queen away and gave them another queen, and as they died out, naturally I got rid of them. But the ordinary Italian bee or the black bee, or the hybrid, I have never known to attack horses. I have my farm horses passing up and down the lane within possibly 20 feet of where the bees are. Bees are flying on both sides, but they can not see the horses from the hives. and they do not attack them.

KEEPING DUCKS IN A BEE-YARD.

"Is it safe to keep ducks in the bee-yard?"

The Members—Yes.

Mr. Todd—Safe for which, the ducks or the bees?

Mr. Abbott—I do not think it is. My neighbors have some ducks and I have some. My ducks are well behaved, and they do not interfere, but I noticed a big drake from the neighbor's the other morning went in front of a strong colony of Italians and the bees were disappearing very fast. I don't know how long he would have kept it up, but he kept it up until I drove him away. At that rate it wouldn't have taken long to have the bees all eaten up.

Mr. Arnd—I once had neighbors who said that my bees killed the ducks. They happened to find a bee in the neck of a dead duck and they said it killed the duck.

Mr. Kimmey—if I were going to answer that question I should inquire whom the bees belonged to, and whom the ducks belonged to. If the bees belonged to the man who asked the question I would say no; the ducks will kill the bees.

HOW FAR BEES GO FOR HONEY.

"If honey is scarce, how far will bees travel to gather it?"

Dr. Miller—Before we get into a long discussion, I would suggest, if we stick right to the question and those who know, who have some definite testimony as to the distance they have known bees to go will tell us, we will get information.

Mr. Arnd—I have known bees to go 6 miles.

Dr. Miller—How did you know?

Mr. Arnd—Because they gathered buckwheat honey, and there wasn't any buckwheat within 6 miles.

Mr. Whitney—I can not give any evidence from personal observation, but I remember reading in one of the bee-papers of bees going 9 miles. [Laughter.] Hold on! Don't laugh! Let me tell my story. You will believe it. During the time of the big fire in Chicago there was also a fire in northern New York, in a black-ash swamp, and it swept off the whole swamp. It was 5 miles long. The next year it grew up to fireweed. A gentleman living south of that swamp 4 miles owning the only Italian bees in all that region, found his bees very busily at work. He hitched up his team and drove north along the road. He could see his bees going and coming, and he drove to the south end of that swamp, and he said he never saw such a sight in his life as he saw there. His bees were busily at work on that fireweed. He drove to the extreme north end and he said they were just as thick there as they were at the south end. He knew they were his bees, because he saw them going and coming and they were the Italian bees, and the only Italian bees in that region he owned at that time. It seems almost incredible but I saw the man's picture in the journal that published the statement and he looked like an honest man.

Pres. York—Was it Ira Barber?

Mr. Whitney—That is the name.

A Member—if Ira Barber told it, it is so.

Mr. Wilcox—I have some knowledge of it, because I used to be a bee-hunter, and as a bee-hunter we always know how far it is from where we start to where we find the bees. We followed them up and we found bees 5 miles from home, but exceedingly rarely; more commonly 4 miles. Yet I never knew bees to work profitably—to carry honey profitably to store a surplus — at a distance greater than $2\frac{1}{2}$ miles.

Pres. York—Bearing on that last point, perhaps Mr. Arnd will tell as to the result of the working 6 miles away. How much did they do?

Mr. Arnd—They did not do very much. In fact, it took me about 6 months to find where they did get the honey; and I found afterwards that the buckwheat was 6 miles away.

Pres. York—The honey was all gone by that time!

Mr. Arnd—The honey was all gone.

Mr. Wheeler—I had a pretty good experience along that line. Some 20 years ago I lived in Iowa. I went into a country where there were no bees at all. The nearest colony was 15 or 20 miles. I watched those very closely, and I watched the fielders to see how far the bees went, and it was very, very seldom that I found a bee farther than a mile away from its home; and out there there was no chance of being mistaken about the distance, because the country was all measured off in section miles, mile by mile, and hardly any of those bees traveled more than a mile.

Mr. Wilcox—What season of the year?

Mr. Wheeler—At all times, all through the working season. They did not appear to go much beyond the mile limit. They were thick within that mile.

Mr. Todd—Nectar must have been plentiful.

Mr. Wheeler—No, that was the peculiar thing about it; they hardly made a living. It was a very poor country at that time. Since then white clover has come in, and it is a fine country for bees now; but at that time they had to skirmish to get a living, and they very seldom got away more than a mile.

Mr. Clarke—I think the last speaker and I come from the same locality.

Pres. York—The same State, any way.

Mr. Clarke—I don't know whether the bees we have at the present time are better fliers or honey-gatherers, but my apiary is at Plymouth Creek, half way between Le Mars and Merrill, and my apiary is situated upon the northeast corner of the section. One mile to the farthest end of it I have a pasture of 40 acres, and it was about as white as a white tablecloth this year with white clover. We had a considerable crop of honey there this year, and my bees all through the season never worked on my farm. They went almost to Merrill to gather the honey; and what could be the reason of that? Mr. Arnd says he could not see the surplus. I have forgotten just exactly what the average is, but one colony stored 630 pounds, and a number of them over 300; some of them up to 400 pounds of honey. Whether I have the long fliers, or whether the country is changed, I can not say, but that is my experience.

Mr. France—As to how far bees work from the home yard, I may say my bees

had an abundance of basswood years ago right at their door, but it has been cut away, so that the nearest basswood now to the home yard is 3 miles, and I notice that when that basswood is in bloom, although it is near one of my apiaries, the home yard works on it. One time I was out on a lake 6 miles across. There was an island, and while out there upon that island bees lit upon my shoulder and excited my curiosity. There was no bee-tree on the island, and I went across to the other side and found bees there working, and they went clear across that 6-mile lake to some hives on the other side. They had one chance to alight if they chose to, in their flight, upon this island; but they certainly were working across the lake 6 miles from home.

Mr. Wheeler—Within the last 2 or 3 years I have known apiaries within 2 or $2\frac{1}{2}$ miles of each other, and as far as I know the bees are exactly alike; where one would gather a good crop, the other gathered scarcely any. That proves to me they do not fly far.

Dr. Miller—That does not prove the point Mr. Wheeler makes. How far did you say?

Mr. Wheeler—2 miles.

Dr. Miller—Here may be something off here, and this yard is gathering upon it—this one nearest to it; it is within its range, but about as far as it will go. This other yard, having 2 miles farther to go, will get nothing. (I don't know whether the stenographer can get all my motions.) The point is this; No matter how much the difference is, there is a difference in the distance, and yet it is very difficult to decide on any sort of reason why there is this difference between two apiaries. For instance, I have two. Take one year with another and the northern apiary will do a good deal better than the southern one. I can not tell any reason why. Sometimes the southern one will do the better. I do not know any reason for that either; and when you come right down to it, to find out the reasons why bees do things, there are a whole lot of things we don't know.

Mr. Duby—Maybe we could tell better if somebody could give us the average speed of bees. I wonder if anybody knows that.

Dr. Miller—For want of any rate of speed, I give 60 miles per hour.

Mr. Moore—This may be instructive,

although it is not accurate at all. I feel sure I read somewhere that an engineer in his cab saw a bee quite close up to his engine when they were going at a rate of 60 miles an hour, and the bee kept up with the train. If that is true, it throws some light on the flight of the bee.

TOADS AND SNAKES EATING BEES.

"Do toads, as a rule, destroy bees, when permitted to stay about the apiary?"

Mr. France—There are occasions when I think a toad will destroy a good many bees if allowed to stay about; but while it is destroying those bees, if there are any moth-millers around, he goes for those, also. I think he "pays his keep" if you let him alone.

Mr. Wheeler—May I amend the question so far as to include snakes? Do snakes eat bees?

Dr. Bohrer—I do not know whether snakes do or not. I do not like them about the apiary, though. I do not like their looks.

Pres. York—I doubt if many bee-keepers drink enough to see "snakes" around the hives!

Dr. Bohrer—I saw one, a blow-snake, 6 feet long. But speaking about toads, I have heard them accused of destroying bees to quite an extent. I saw one, I think nearly as large as my fist, sitting on the alighting-board of a hive, and I concluded I would watch and see what he was up to. He was looking indifferently at nothing, as far as I could tell, but after a while a bee came in reach and it disappeared a whole lot quicker than it could have gone into the hive if it had done its best. I watched him for a while, and he destroyed a number of bees, and I destroyed the toad. He was the finest one I ever saw, the finest one I ever raised in Kansas, and it is a good place for toads. They do well. They may catch some millers, but I think my bees are strong enough so that they will attend to the millers; and I believe we ought to expel the toads from the apiary, as a rule, from what I saw there. Mr. Quinby, in his book, claims they are very destructive. They may be kept out by putting a board around.

Mr. Kimmey—I have seen a toad catch a few bees, but it did not seem to be very serious. I have seen the toad near the entrance and the bee was gone.

There is no question the toad got it.

Mr. Wheeler—When I asked if snakes eat bees I was going to suggest that they eat the toads.

Pres. York—The snake may eat the toad full of bees, I suppose!

DANGER OF OVERHEATING BUCKWHEAT HONEY.

"Why will not buckwheat honey bear heating so hot as clover honey?"

Mr. Arnd—Won't it?

Pres. York—Without destroying the flavor, I suppose it means.

Mr. France—I do not know the nature of the answer required, but when I was in New York there was some buckwheat honey brought in for me to suggest whether it was suitable to feed bees. I said, "No; not that wild honey." "But that is New York State buckwheat," they said: I replied, "I can't help it; I would not want to feed my bees on it, because that honey is full of pollen. You can feel it on your fingers—the grain in the honey of the pollen." One of our most extensive bee-keepers lost 90 percent of his bees that winter. I think for the same reason of the pollen in it, if you heat it too much in liquifying, you will darken it, and also increase the flavor of it.

Dr. Miller—The question implies that the heating of buckwheat honey injures it more than heating clover honey. Has any one testimony that that is a fact?

Mr. Wilcox—I have very positively proved that it is a fact. I have been melting buckwheat honey for 20 years, and I have been melting clover about as long, and I know certainly I can not heat buckwheat hotter than 140 degrees without impairing its flavor, or changing its flavor so that I can discover that it is what we call "boiled honey;" and I heat clover honey or basswood honey easily to 160. I have tried it with a thermometer, again and again. I will say further that it is almost impossible, with ordinary care, to reliquify buckwheat honey without impairing its flavor. I can not fully restore its former flavor. I am anxious to know if there is any other explanation than that given by Mr. France.

Mr. Moore—How do you tell how hot you have your honey?

Mr. Wilcox—Put a thermometer in it.

Mr. Moore—Do you use a thermomet-

er at all times in heating honey over the fire?

Mr. Wilcox—Not at all times, but frequently; use it both in the water around the honey, and in the honey.

Mr. Moore—Can you overheat the honey while there is a candied portion in it?

Mr. Wilcox—I shovel the honey into the clothes-boiler, and when it is about melted I have a thermometer and drop it into it, and also in the water.

Mr. Moore—The question is, Can you overheat the honey while there is a candied portion in it?

Mr. Wilcox—Yes. If there is no more than one pound melted, and that is heated too hot, that will flavor the whole body. The rest may be candied, meanwhile.

GROUND-MOLES IN THE APIARY.

"How can ground moles be destroyed in the apiary?"

A Member—Catch them and choke them!

Another Member—The same way as they can anywhere else.

Mr. France—Use bisulphide of carbon.

Dr. Miller—Plenty of cats.

A Member—A good dog.

Mr. Taylor—A cat won't catch one.

Pres. York—Mr. Taylor says a cat won't catch one "in his locality."

Dr. Miller—They will in mine.

Mr. Taylor—They won't in any locality.

Dr. Miller—I would like to ask what his evidence is that a cat won't catch them in his locality.

Mr. Taylor—A cat won't dig for them.

Dr. Miller—I don't know how they got there, but I see them in the cat's mouth in my locality.

Mr. Taylor—You mean the meadow-mole, don't you?

Dr. Miller—They are short, and they look as if they were blind.

Mr. Taylor—They both look as if they were blind.

Mr. Kimmey—At one time on my lawn I would get up in the morning and would find where something had gone under the ground quite a distance; and sometimes I would see it working, and dig down with a spade and get it. I thought that was a mole. That is what you are speaking about, isn't it?

Mr. Taylor—Yes.

Mr. Kimmey—That is the kind I

have seen with the cat. I don't know whether she dug down, or how she got it, but I have seen it repeatedly. She got them until she exterminated them all.

Mr. Wheeler—I have done it by digging down in the hole and putting a piece of parsnip or carrot with a little piece of strychnine in it.

Mr. Kimmey—Do your moles travel the same path?

Mr. Wheeler—They went back and forth.

Mr. Kimmey—Mine did not.

Mr. Duby—Another good way of destroying moles is a common castor-oil bean. You see the track of the mole. It is never deep. Just make a hole with a stick and drop a castor oil bean in it.

Dr. Miller—Do the moles hurt the bees?

Mr. Taylor—No, but they dig up the ground and kill the sod.

Dr. Miller—Then what do we care about moles?

Mr. Wheeler—Does the castor-oil bean kill the mole or scare him away?

Mr. Duby—Kills him. The next morning he will be on top of the ground.

Mr. Wilcox—I want to get rid of the moles. They are eating my wife's flowers. They do not hurt the bees, but they are destroying the flowers.

Pres. York—Here is a question for Dr. Miller to answer. Are you ready?

Dr. Miller—Ready.

How to SUCCEED WITH BEES.

Pres. York—"How can I succeed in bee-culture?"

Dr. Miller—I had the same question asked me a number of years ago. A lady in the State of Wisconsin wrote to me, "Will you please give me your system of bee-culture?" When I have it written out for her I will pass it on to you.

Pres. York—Dr. Miller wants more time, but he has had over 40 years now.

DISTANCE BETWEEN QUEEN-BREEDING APIARIES.

"How far apart should queen-breeding apiaries be situated in order to prevent amalgamation?"

Mr. Horstmann—6 miles.

Mr. Wheeler—According to Mr. France, it should be 12 miles—6 miles each way.

Dr. Miller—if I am not mistaken, Father Langstroth said a distance of

half a mile; and others will make it 6 miles. If there is any definite information on that point it will be important to get it. If not, we would better not spend much time on it.

Mr. Hudson—When I started rearing Italian bees for sale there were black bees around me—no Italians—and I commenced to Italianize all the bees, until I got all Italians within the 3-mile limit, and that eliminated the trouble.

Mr. Abbott—When I first started in St. Joseph I had, about $\frac{3}{4}$ of a mile out, 150 colonies. My brother lived in the city and we had in his yard in the city 10 or 15 colonies of pure Italians. Those out in the large apiary of 150 colonies were not all pure Italians, but we kept drone-traps on them and caught all the drones except the Italian drones. We had one of those Cyprian queens, and we wanted to get all the queens mated, if possible, and the colony produced about 100 queen-cells. We saved the virgin queens and put them on the hives according to my method, having 5 or 6 on the hive—some of them in the city and some of them out at my place, where the other bees were. More than half of those out where the 150 colonies were, were impurely mated. There were no drones flying in our yard, however, except the Italian ones. Those in my brother's hives were every one of them mated with Italian drones. There was not a single queen mated there except the pure ones. They were yellow. I concluded the condition of being hemmed in in the city had something to do with that. The apiaries were not to exceed $\frac{3}{4}$ of a mile apart. We tried that repeatedly, and we had the same experience every time. We could get them purely mated in the city without any trouble, but if we undertook to mate them out where the other colonies were, at least half of them would be impurely mated.

Dr. Bohrer—I wrote that question, because I believe it is one of considerable interest. I stated, I think, once before here today, that I bred queens as early as 1864, and I made it a point in the years 1864 to 1866 to get control of all the black bees within 6 or 8 miles of me, and of course out beyond that there were hybrid bees, because they were mixing constantly. I dropped out in 1873, moving to Kansas, where the country at that time was not adapted to bee-keeping at all, and since I have

come back into line again I find there has not been very much improvement, if any, in the Italian bee brought to this country. The bees that I got in an early day, I got some from Mr. Arthur Gray, of Butler County, Ohio, and some from Mr. Langstroth. I got one queen from Mr. Langstroth that duplicated herself oftener than any I ever reared, and yet after rearing about 100 queens one hatched out that was the blackest insect I ever saw in my life, of any kind, showing that there was some foreign blood. There came the question, then, whether there was a distinct race of bees that were Italian; whether they were pure and distinct, not amalgamated with any other race of bees, and while this question was up, and I was studying about it, and I don't know but writing about it, I met Mr. Langstroth in Cincinnati and we had a talk on the subject. I told Mr. Langstroth about this queen I purchased, and having so many duplicates—about 100—and then having an insect as black as any I ever saw, and that I had some doubts as to there being a distinct Italian bee, whether they are a distinct race. He said, "I know they are not, but what their make-up consists of I can not tell." I have done a good deal of investigating for many years, and I do not believe by importing the various types of bees, Cyprians and Caucasians and different breeds, that we are going to improve our bees very rapidly. I said down in San Antonio, to Dr. Phillips that I was opposed to the Government sending out Caucasian queens to breeders unless they would pledge them to breed 12 to 15 miles from other apiaries, so that amalgamation would be impossible. Keep them separate and see if they are really worthy to be introduced in the United States, or not. The Italian bees as we had them in their highest degree of purity along in the '60's were undoubtedly an improvement on the common black bee. I never had a colony of Italian bees destroyed by the moth-miller. They were better-natured. Then I handled my bees many and many a time without any protection whatever, either on my hands or over my face. I can't do it in Kansas with the bees I have now; only occasionally when there is quite a flow of honey the bees are better-natured. We are all better-natured when we have a full stomach, and the bees are pretty good-

natured at a time like that. You can open up a colony of hybrids—not Cyprians, they do not ask any odds for a flight at any time, but they are good-natured at a time like that, but at any other time I won't venture. Sometimes they appear to be as innocent and harmless as flies, and at other times they will come out at me, thousands of them. The reason I put in that question was to argue that very point, and to show what amalgamation is doing for us, and that from 10 to 15 miles is as close as I would advise their being bred, the different races of bees.

TAKING BEES OUT IN SPRING.

"How soon in the spring should bees be taken from the repository?"

Dr. Miller—Take them out when the soft maple is in bloom, unless the weather is such that you feel pretty sure you will have cold weather after that; but not earlier than that.

Mr. Moore—When the oak leaf is as large as a squirrel's ear.

Mr. Horstmann—What time does the soft maple bloom?

Dr. Miller—if you haven't any soft maple you must take some other rule, but the soft maple is a very common tree, and I have no doubt Mr. Horstmann can find it without going very far from his home, unless they are scarcer than I think.

Mr. Horstmann—Can you give us about the time of the month?

Mr. Taylor—First to the 10th of April.

Mr. Moore—I think the box-elder takes the place of the soft maple in this part of the country.

Dr. Miller—That is much later.

Mr. Moore—I mean as to prevalence of the wood.

Dr. Bohrer—Any pleasant day when it is warm enough for the bees to fly.

Mr. Wilcox—When the soft maple blooms.

Mr. Wheeler—When the thermometer is from 55 to 60 degrees, without any wind, is my view.

Dr. Miller—That might occur in February.

Mr. Wheeler—Month of April, then.

Mr. Taylor—About my latitude, (Lapeer Co., Mich.,) take them out the last days of March, when it is too cold for them to fly.

Mr. Hutchinson—Suppose the bees are uneasy and would force themselves

out, would you take them out then when it was cold?

Mr. Taylor—I do not think they would be uneasy, so uneasy as to force them out, if you took them out when cold.

Mr. Hutchinson—I agree with you, if the bees are healthy.

SIZE OF HIVES.

"Which is better, an 8 or a 10 frame hive?"

Mr. Wilcox—I would say an 8-frame for comb honey, and a 10 for extracting.

Mr. Hutchinson—I second that.

Mr. Clarke—I prefer the 8-frame to the 10-frame, for the simple reason, if you know how to manipulate the 8-frame properly you can produce one half more honey than you can with the same process and use the 10-frame hive. I do not claim to know as much as many of the older bee-keepers that are here, but I use both kinds together, and I have tried them on an equal footing, with the colonies of equal strength, and the queens in the colonies bred from the same queen-mother and equally prolific, sitting in the same yard, and I have set them on scales alongside one another. That is my result in 15 years.

Dr. Bohrer—Did you succeed in wintering them as well in the 8-frames?

Mr. Clarke—Yes, sir. I have never lost a colony in 15 years, wintered in the cellar.

Mr. Abbott—I suppose I ought to say that when I wrote those heretical articles some years ago, I said I would not have anything but an 8-frame hive for comb honey. I am just of the same opinion now. If I were starting in business again, I would not have anything but a 10-frame hive. I am sure I am right now. I was just as sure I was right the other time. That it the result of getting older, and getting your hair a little grayer.

Mr. Horstmann—I would like to have Mr. Abbott tell us why he knows he is right. We want some reason for it.

Mr. Abbott—There is not room enough in an 8-frame hive for an ordinary man to keep bees successfully. You won't give the bees the room they need as rapidly as they need it. In a 10-frame hive they have the room to start on, and you give them more surplus room when you put on one super, and when you put on two of course you give them still more in proportion;

and you are more likely to give them room when they ought to have it. The reason why so many people fail in bee-keeping is because they do not give the bees room at the right time, and plenty of it. There is more honey wasted in the State of Missouri from ignorance as to when bees need the room than there is gathered in all the hives of Missouri every year. I am confident of that; and I am confident that if we could take out the 8-frame hives that are now in the State of Missouri, and replace them with 10-frame hives, we would not only increase the hive four sections more, but we would increase the crop nearly double. I feel confident of it. I have watched the matter very closely, and I do not think, for the farmers especially, that anything smaller than the capacity of a 10-frame hive ought ever to be used. I did not believe that when I was writing those articles, but if I were starting tomorrow, and for those reasons, I would start with a 10-frame hive, and give every colony from 3 to 4 supers every season. Taken one season with another, in the state of Missouri—Missouri is not a good State for honey, because the clover crop is not sure—I can get more honey out of the 10-frame hive.

Pres. York—You mean the 10-frame Langstroth?

Mr. Abbott—Yes.

Mr. Horstmann—There is no reason why the bees should not have all the room they want in an 8-frame hive. I did not write this question, but I am glad it has come up. I use a good many 8-frame hives. I can bring them out of the repository in the spring and just as soon as the colonies get strong enough I can raise the frame up and give them 16 frames to work in, and I am sure that is all they need; and when the time of flow begins I can take the hive-body off and put on supers just as they need them. When one is pretty nearly full I raise that up and put another one under it; and when the top one is full I put another one on the top, and I keep the colonies working with 3 supers. I do not see where you can get anything that will beat the 8-frame hive for comb honey. I am so well pleased with the 8-frame that I am going to use it altogether for both comb and extracted honey. I can use 8-frame bodies, put up 3 or 4 of them, build them up as high as I see fit, and

give the queen all the room she wants to lay. The hive-bodies will be just as easily handled as the 10-frame.

Dr. Miller—I would like to enquire whether any of Mr. Horstmann's neighbors like a large hive.

Mr. Abbott—Mr. Horstmann does not believe in a 10-frame hive, but in a 16-frame hive. He goes me a good deal better.

Mr. Horstmann—Speaking of my neighbors, I honestly believe that there is not a bee-keeper in this hall this evening that has better neighbors than I have. I have never had the least bit of trouble with my neighbors. Speaking of the bees, I have the school teachers bring classes over almost every year to see the bees—classes of children. I have a colony of my bees over in the University now. There is no danger of any stings. I have them "educated."

Mr. Moore—I am for the 10-frame hive, first, last and all the time, for extracted honey or comb honey. The manipulation Mr. Horstmann is talking about is absolutely out of the question for most bee-keepers, I take it; it is too much bother; and, just as Mr. Abbott says, he is getting 16-frame hives instead of 8. That is not the point at all. Most bee-keepers, when they give the bees 8 frames, think they will beat the bees out of just 2 frames. When you talk of bees you are not talking of one year; you are talking of 5 years. The great question is wintering the bees. The question is, Does the queen have plenty of room? A good, young queen will fill 2 of those hives in favorable circumstances. When you move them, as Mr. Horstmann says, you upset their arrangements. They know where they want the brood, and where they want the honey. You give them the 10-frame hive and the queen fills a large portion of it with eggs, and they put their honey in there, and they fill that as full as they dare to before you put on the sections. It is a mighty poor year when they don't have enough honey. They come out in the spring with plenty of honey, and they won't be economical as they will with the 8-frame hive, and they will be a going concern. It is not one year alone, but it is a series of years, for 5 years, that finally gets the money; and I believe for the everyday bee-keeper who can not do so much manipulation, that the 10-frame hive is the thing.

The Members—Hear!

A Member—Did I understand Mr. Moore to say that a good queen will fill 2 of those bodies?

Mr. Moore—Under favorable circumstances she will fill 3. It is only a question of unlimited honey; that is all.

Dr. Bohrer—I get more honey from 10-frame colonies than I do from the 8, and I have tried both. One thing that induced me to adopt 10 in preference to 8 was that one of the first Langstroth hives was 18 frames. A good queen would populate all of them, and we got our honey from sections. We did not use extractors at that time. Now I get more honey keeping the combs cleaned up, and keeping the bees constantly at work, from my 10-frame hive. You can get more than from the 8-frame.

Dr. Miller—There is a point that has not been touched upon, that is, convenience in handling. With some people that makes a great deal of difference. A strong man does not care whether has has 8 or 10 frames, though even to a strong man it is a matter of convenience to have the 8 frames. As to the care of them, I am sure there is a good point there. Mr. Abbott is right in saying that the farmer is better off with the 10-frame. That is not saying anything detrimental to farmers, but when we speak of farmers as bee-keepers we speak of them as those who do not make a speciality of it, and do not expect to spend a great deal of the time at it. I am sure that the average farmer is very much safer with the 10-frame hive than with the 8-frame; and yet, with sufficient care and attention, I am a little afraid that more comb honey can be obtained through the 8-frame hive than through the 10. For years I used the 10, and, I hardly know why, I think there was a fashion for the 8-frame, and I changed over to 8-frame hives. I have the 8-frame hives yet, but I do not know that I have got any better crops since, but I am a little afraid I have. I am afraid that it would not be so safe for me to use 10-frame hives, and yet there is a little more work required with the 8-frame hives. I do not think Mr. Moore's objection would hold, that using two stories involves so much work that it is not easily done. Really, the amount of work required using two stories during the breeding season in the spring is not a

great deal, and if you will take the pains to have surplus combs you can get along through the spring and through the winter just as well with the 8 as you can with the 10; but the man who does not give his bees particular attention will be pretty sure to lose a whole lot more bees in the winter in the smaller hives than he will in the larger hives. But there may be a difference also as to locality. We laugh about the matter of locality, and yet that comes in early every place you touch a bee-hive, and touch bee-work, and it may make a difference in that. But I rather suspect—I am not sure about it—I rather suspect that if you give the work to it, that you get more honey with the 8 frames, and enough more to more than pay you for the extra amount of work you give.

Mr. Taylor—There is another point I think ought to be considered in this, especially by those who are treating a good many bees. Of course it is a question of interest as to how many bees we ought to keep in one place. Now suppose my location would profitably sustain 100 colonies in 10-frame hives. According to the idea of Dr. Miller, if I kept 100 colonies in 8-frame hives in that location I would get as much, or more—probably more—honey from the 8-frame 100 colonies than from the 10-frame ones. It is claimed—and with some truth, no doubt—that the colonies in the 10-frame hives, will average considerably more brood than those in the 8-frame hives. Supposing that they have one-fifth more brood, that is, brood in proportion to the number of frames in the hive. Well, if that is so, then if the location will sustain 100 colonies in 10-frame hives, it will sustain 120 colonies in 8-frame hives. That is self-evident. Now there is a greater advantage. Dr. Miller, if his ideas are sound, would get at least one-fifth more honey; instead of 8000 pounds he would get 10,000 pounds, and probably considerably more. That is a point that we ought to have in mind. There is not so much advantage in having a great quantity of bees in large hives if we can get the honey from a few more hives that are smaller and more easily handled, even if we have to have more queens. Queen-bees do not cost much to a bee-keeper.

Mr. Moore—Dr. Miller would grant you that if you winter your bees in the

cellar the question of how much honey there is in the brood-chamber is not so material. I take it that a very large number of people who keep bees in an ordinary rough way winter them out-of-doors; but I would like to ask if there is any one here who has had large experience in producing comb honey in 10-frame hives?

Dr. Miller—I am one. What is it you want to know?

Mr. Moore—We want to know whether you have made such experiments as you can say that you can not produce more honey in 100 10-frame hives than you can in 100 8-frame hives, other things being equal.

Mr. Taylor—In 5 years.

Dr. Miller—In answering this whole question, there is one point brought up by Mr. Taylor that I am afraid will not hold. He is taking the ground that a 10-frame hive will have more bees in it than an 8-frame hive. Not necessarily. Because when we are talking about 8-frame hives we are talking of having two stories to rear brood in, and having just as strong colonies as the 10-frames. To come now to answering the question directly: It is not an easy thing, unless you have a lot of 10-frames side by side with 8-frame hives. I had a good many years' experience with 10-frame hives, and then I had a good many years' experience with the 8-frame hives, but you see you can not compare them. It is not an easy thing. The fact that I have had much experience with each of them does not help me to any positive answer as to what they will do in the same year. The trouble with me is, when I make an experiment I go head over heels and change everything, and sometimes lose a whole lot by it, but I have an impression, by giving the right kind of care, I can get a little more honey out of the same amount of the 8 than of the 10—in comb honey—and allow them to use the two stories.

Mr. Moore—Dr. Miller, you are getting clear off the question. You are running in harness with Mr. Horstmann. You people are not talking about an 8-frame hive—you are talking about a 16-frame hive, and you are telling this convention that you can get more honey from a 16-frame hive than from a 10-frame hive, and you ought to. The question is, Will you get more honey; or as much, from an 8-frame hive as a

10-frame hive, as the ordinary person manipulates them, not the way you skilled people handle it?

Dr. Miller—Begging the Secretary's pardon, the question is not the way of manipulating. The question is, Which shall I take? and the manner of using is a question that comes afterward. The question is whether I shall take an 8-frame or a 10-frame hive, and then I may use one or both of them 2 stories. Don't let us get away from the question. If you want to go back to that, if you confine yourselves to the 8 frames—if Mr. Moore wants that question answered, I will answer it. Confine yourself to 8-frames, or confine yourself to 10 frames, and which will you get the most from? Ten frames, every time, if you are going to hold me down to 10 frames; but that was not the question, as I understand.

Mr. Moore—That is the way I understood it.

Mr. Abbott—Here is a point Dr. Miller does not seem to take into consideration. The bees that are in a 10-frame colony, separated and put into 2 8-frame colonies, will not gather as much honey in proportion as they will if left all together. They can not do it. The greater bulk of bees that you can get in one body, working in one hive, the greater quantity of honey you will get, and you can not take those 2 8-frame hives, using double bodies, and get the same amount of bees in the 2 8-frame hives, working in that way, as would be in one 10-frame hive, and get as good results as you could if the bees were all in that 10-frame hive, and working as one colony.

Mr. Wilcox—My answers were based entirely upon the suppositions that have been explained by Dr. Miller, and I am exactly agreed with him and Mr. Horstmann, and my system is exactly the same as that described by him without the slightest variation, and consequently I still adhere to the statement. My understanding of that question was that we were to use the hives as we pleased, which is better to adopt? Of course, if we were confined to a single story, and use the same size all the season through, the 10-frame would be the better undoubtedly. Another point I want to give: I do not know that it is of any importance except that it is interesting. I tried an experiment once. I put a few colonies in 4-frame

houses, a few in 6-frame, a few in 8-frame, and a few in 10-frame, and set them all in a row close together, with young queens all the same age, and kept them 2 years, and the result was just about in proportion to the size of the hives, except that the bees in the smaller ones nearly all died the first winter.

Dr. Miller—Allow me to explain, as Mr. Wilcox suggests, I did not mean to suggest by any means that the 2 stories are used all the year round, only in building up the colonies; when they have got so strong in the spring that they need the 2 stories until the time of the harvest. They do not always need the 2 stories, but I want the privilege of using the 2 stories when they get strong enough to need it.

Dr. Bohrer—Dr. Miller answered the question categorically. He says he gets more honey from the 10-frame hive, and then he stated the chief objection there is to a 10-frame hive, and I find the same objection to it, and that is, that the 8-frame hive is decidedly preferable when you come to handle it, especially to a man afflicted with lum-bago. That is the principal thing. The Doctor says he gets more honey from the 10-frame hive.

Dr. Miller—No. It is the other way; at least I am afraid I get more from the 8-frame hive.

Mr. Sewell—It has come to a rather interesting point. I would like to ask a question of Dr. Miller. Does he not get some gain, or perhaps a great gain, in taking away those 8 frames just at that time? In taking them away, or shutting the queen down to an 8-frame, you cramp her to a great extent, so that she does not produce a great lot of useless workers that are going to go on and be consumers, rather than useless workers, just at that time.

Dr. Miller—I am not sure it is safe to say anything against that generally accepted theory about rearing useless workers; but if I dared say it, I would say I don't believe in it at all. I want to rear all the bees I can at all times of the year. That thing of rearing useless workers I am not afraid of—I do not bother myself about it at all. But the question he asks is an entirely pertinent one. The taking away of those frames at that time still leaves, I think, that 8-frame hive, as much room as the queen will be likely to use during the harvest time; and even if she were in a

10-frame hive, I do not believe she would use more. You know the queen begins to limit her laying as the harvest begins to come in. I think, as a rule, they will have plenty of honey in the 8-frames. And then, please remember this: In limiting the amount in the lower story we are really not limiting the room for the bees. It is simply giving room in a different place. We give the room above, and we are giving them all the room that they need.

Mr. Moore—The importance of this discussion, from my standpoint, is this: There has been a fashion, a saying gone abroad, that to produce comb honey you should use the 8-frame hive. It is a question of what we are recommending to the bee-keepers. What are Dr. Miller and the other scientific gentlemen recommending to the bee-keepers as the best thing for comb honey? I do not believe for a moment that all these people who are not professionals, who have been using the 8-frame, have been using the 2 stories. I take it that they have been using a single 8-frame hive, and they think they have been making a profit over the 10-frame, which I think is a grievous error.

Mr. Horstmann—Mr. Moore speaks of a 16-frame hive. According to his idea, I have had 50-frame hives. I have had my hives stacked up 5 bodies of 10 frames each. According to his idea I had 50 framehives. I say what is meant by an 8-frame hive is an 8-frame hive-body, one body that will contain 8 frames. You can pile them up as high as you please.

The meeting then adjourned till 9 o'clock the next day.

SECOND DAY—MORNING SESSION.

The convention met 9:30 a. m., with Pres. York in the chair. Dr. Miller offered the following invocation:

Our Father, who art in Heaven, we thank Thee that Thou carest for us. We thank Thee that Thou hast the interest of bee-keepers before Thee, even with all the infinite cares that Thou hast. We thank Thee for this meeting together for conference; for the good feeling that existed in the session yesterday. We pray that this good feeling may continue, and we ask Thee that all that is done and said to-day may be useful, that the time may be well spent. We pray, dear Father, that Thy bless-

ing may be upon us. We know that if we have Thy blessing it will be a good deal to us. We ask it in Jesus' name. Amen.

AUDITING COMMITTEE'S REPORT.

Pres. York—We will now listen to the report of the Auditing Committee. Mr. Kimmey, I believe, is chairman.

Mr. Kimmey—We have the following report to offer:

To the Chicago Northwestern Bee-Keepers' Association:

Your committee appointed to examine the books and accounts of the Secretary-Treasurer respectfully report that they have carefully examined his books and vouchers, and find the same correct.

FRED L. KIMMNEY
W. B. CHAPMAN
J. C. WHEELER
Committee.

Mr. Kimmey—I would like to move that the report of the committee be adopted.

Dr. Miller—Second the motion.
The motion was put and carried.

BREEDING THE BEST QUEENS.

"Under what conditions or by what manipulations are the best queens produced?"

Mr. Taylor—The swarming impulse.

Dr. Miller—I believe that the same conditions that are likely to produce the swarming impulse will perhaps be as well without the swarming impulse. That is, a good flow of honey, a strong colony, and all things in an encouraging condition.

Mr. Whitney—I asked that question. From what we read in the bee-papers there are all sorts of manipulations in breeding queens by queen-breeders. I buy a good many queens, and I would like to know where I can get the best queens, or under what sort of manipulation I can get them. But what few queens I rear for myself, I find the best ones are those that are reared, as Dr. Miller says, in a full colony of bees and under the swarming impulse. I believe we get the best queens in that way.

Dr. Bohrer—I find Dr. Miller's statement is substantially correct. There is no question about that. But the same conditions will exist if a strong colony is rendered queenless, and then given fresh-laid eggs. I have slipped a frame full of eggs the night before in-

to a colony which built the queen-cells, and then have taken them out and distributed them among nuclei, when they were finished and sealed over. I think those conditions are similar to the swarming impulse, because they will respond to the same method, give the same kind of care until the egg is matured, as they would under the ordinary swarming impulse. Now as to the best of queens, aside from that, we might differ as to the different varieties of bees, that is, different races. I have always found the highest grade of Italian bee was the most satisfactory.

BEST RESULTS IN COMB HONEY.

"How should 10-frame hives be manipulated for best results in comb honey?"

Dr. Bohrer—There are two ways of doing it. One is to cut it in sections, and the other—some one will take exception to the position if I should say to use another body on top, and raise the combs up and put the bees to work above. I think you would get a little more honey that way than you would to use sections, by using a two-story hive.

MANAGEMENT OF GOLDEN ITALIANS.

"Should golden Italians be managed differently from the darker varieties?"

Mr. Taylor—Yes. Kill them.

Pres. York—Who would rather manage them alive?

Dr. Miller—I think Mr. Taylor's answer is right for some of them, and it is very wrong for some of them, too. I think there is a great deal of difference. I believe there are golden Italians that are good bees, and I think there are some not worth the powder to blow them up. I do not know any difference, so I am not answering the question. I was rather wanting to limit Mr. Taylor's very sweeping statement. At the time of the World's Fair Mr. Doolittle had some of the golden bees here, and two of the best queens were left with me over winter to be taken care of before being returned to New York State, and from those I reared some queens, and those were good bees. I would not say that they were not up to the other, and I am not so sure at all that they were very much better. The main thing, I think, about the golden bees is the looks. They are beautiful bees, and there is a great pleasure

in looking at them. As to the real value, as I said before, there are golden queens and golden queens. Some are good and some are very poor.

Dr. Bohrer—I want to corroborate what Dr. Miller has said, having a queen now that is one of the most prolific queens I ever owned, and her bees produced more honey last year than any other in my apiary. I do not think they are corrupted any by Cyprian blood, but I have had some corrupted, and to say they were cross is not expressing it.

Pres. York—Another question, right along in connection with that: "How do the golden Italians compare with the leather-colored varieties?"

Mr. Kimmey—I would like to hear from Mr. Taylor, the reasons for his remark that he would kill the golden Italians.

Mr. Taylor—I never saw any of them that were good for anything. Of course, I have no doubt but what sometimes you will get a queen that will produce bees that may be passably good, but, take them together, I think they are very gentle and very good to look at, but they are not very good for gathering honey. Now, to get right down to it, I would not have an Italian bee. I would rather have a hybrid. It is very much more difficult to get the Italians into the section-boxes than it is hybrids, and when you want to get them out, it is very much more difficult to get them out; and I don't know that they are any better for gathering honey than good hybrids in the matter of temper. It is true that you can go to a colony of bees and by being careful, handle them without veil or smoke. But it is not because their temper is better; it is because they are less disposed to take wing. You get out in a swarm of Italian bees when they are flying, and I think they are a good deal more likely to sting than the black bees are. I think that accounts for the difference in apparent irascibility of black bees. Several of my hybrids—they are all hybrids—I do not call irascible at all. There is very little stinging. I very seldom get stung. Get a stranger in there, sometimes, who is a little nervous, and he gets stung sometimes; but I do not call my bees any more liable to sting than the Italians I have had, when handling them.

Dr. Miller—Before Mr. Taylor sits down, may I ask him whether he thinks

his bees are about like the average hybrid bees?

Mr. Taylor—Well, I do not know that I can say as to that. They are about like the average I have seen. There are some colonies that show quite a little yellow, and some colonies that show a good many bees that you would take to be black bees; but every colony shows more or less of the yellow color. But I do not know that I have a colony in the yard that any one would call pure Italians from their coloring.

Mr. Whitney—Mr. Taylor's experience has been very different from mine. I have been working all the time that I have kept bees to make them as pure 3-banders as I could possibly get. I have had quite a mixture of black bees at times, and they have always troubled me—cross, run like cockroaches. I never had any trouble with 3-banded Italians to get them off the sections when I wanted to get the honey out or have the combs free. Take a frame of honey and hold it right over the end of the hive and take them off at once. Mine are very gentle. I can go into the yard almost any time. I think I showed Mr. France once, at 5 o'clock in the afternoon, without a veil, without smoke, a number of my bees, and I think in a recent copy of American Bee Journal you will find a picture of a little girl holding a frame. It was late in the day, she was without a veil over her face, and she held a frame of those bees. They were 3-banded Italians. When you come to workers, I never saw anything equal to it before, and the only surplus honey I got this year was from my 3-banded Italians. I have 3 or 4 colonies of mongrels, one colony pretty nearly black, and they did not give me a pound of surplus honey—not a pound; while the 3-banders did; and the blacks or mongrels swarmed, and out of 30 odd colonies of 3-banded Italians I had but 2 swarms. It seems strange to me that there is such a difference in the experiences individuals have with the different kinds of bees. I do not believe I would want what they call the golden or all-yellow bee. You know the queens of the 3-banders often are absolutely, yellow, but their bees have only 3 yellow bands. I do not call such a queen as that a golden queen. I call it a 3-bander queen, although I do not see any band on the queen at all, but her bees are all 3-banders. So far as

protecting their hives is concerned, the 3-banders beat anything I ever saw against robbers, and they will clean out the bee-moth in a very few minutes. I have put frames that were filled with the larvæ of the moth right in the center of a 3-bander colony of bees, and in a few minutes they would be all cleaned out. I like them in every respect so far as I have been able to investigate them.

Dr. Miller—I think that one way of explaining the difficulty that Mr. Whitney meets is by saying that bees vary, and that they vary very much. If you have a colony of Italian bees you are not sure, from the mere fact of their being Italians, that they will always be of exactly a certain temperament. With a hybrid bee, still less are you certain of anything of that kind. The Italian bees are more fixed in character than the hybrids. You are more sure of what you have. When you come to hybrids, you don't know for certain where you are. Now, Mr. Taylor has very gentle hybrid bees, and I have very cross hybrid bees. I look for those colonies that will produce the most honey, without regard to their temper. I said, "The honey is the thing I am after; I can stand all the rest." They convinced me after a while that I couldn't stand all the rest. I had to fight with my assistant. I killed a queen and she showed some temper.

Mr. Ford—which showed the temper, the queen or the assistant?

Dr. Miller—Both. She would insist that if they only brought the honey the queen must be allowed to live. If I had it to do over again I would not do exactly the same thing as I did, because I know that the matter of temper is a thing that must be reckoned with. They can go so far you can not stand it; at least I could not, without a veil, and I do not like to wear a veil all the time. My assistant wears a veil all the time.

Dr. Bohrer—What kind of trousers do you wear?

Dr. Miller—I don't handle them with my trousers! [Laughter.]

Dr. Bohrer—Don't the bees crawl up your trousers? They do mine.

Dr. Miller—Answering your question, I wear white trousers. It is a fact that hybrids are much more variable in character than anything like the pure blood of the Italians, and when you are working and selecting to get the best,

as I suspect Mr. Taylor is—he was more fortunate in it or else more careful than I, and in his selections he has good-natured hybrids and I have them just the reverse. He shakes his head. How is that?

Mr. Taylor—I did not select. I have killed just 2 queens in my time on account of the irascibility of the bees; that is all.

Dr. Miller—Perhaps I gave a wrong impression. When I have found one especially cross lot, through the years, I have killed that queen, always; but I have not paid as much attention as I should have done to the temper of queens. There is, I think, the whole thing in a nutshell. The bees vary a great deal, and if one man says the Italians are better, and another says the hybrids are better, they may have different kinds of the same bees. I believe, as a rule, that the hybrid bees will give you more honey than the pure Italians. Now it does not follow from that that it is the best thing to breed entirely from hybrid bees, because they will split all up and you don't know where you are going, as I said before; if you keep trying to breed pretty near pure Italians, you will get enough hybrid stuff in to keep up the black. Try to keep them pretty nearly pure, and you will have more or less black blood in them.

Mr. Taylor—Some reference was made to the Doctor's trousers. I have often been amused in the remarks he has made in his writing about the bees getting up his trousers.

Dr. Miller—Please allow me to correct you. I did not say anything about their getting up my trousers.

Mr. Taylor—They don't crawl up my trousers. They fly. The trouble with your bees, Doctor, is you have too much Italian blood in them. They won't fly at all.

Mr. Kimmey—You speak of Italian and hybrid. We started out to speak about golden. I understand there is a difference between 3-bander and golden.

Dr. Miller—Yes.

Mr. Kimmey—What is the difference, in your experience, between the 3-bander and the golden?

Dr. Miller—As I said before, the goldens vary so much it would be hard to answer that directly. Some of them are one kind and some of the goldens are another. They are a variation from

the pure stock. I do not count them as pure. There may be black blood in the golden stock, in the leather-colored variety, or in the 3-banders. I would not expect to find any black blood in them, although possibly there might be some there, and the thing has got where I do not see how we are going to talk about what pure queens are. If you have golden stock with 5 bands, and then get a little black blood mixed in and cut down to 3 bands, then you can not say 3 bands is a sure sign of pure stock.

Mr. Wilcox—What is your standard of purity, then?

Dr. Miller—I haven't any.

Mr. Lyman—I don't know that I am correct in this, but it has seemed to me that there is quite a little difference in which way the cross is made, whether you start with an Italian queen or a black queen. I think in my experience that the black queen cross, from an Italian drone with a black queen, produces a gentler bee than the other cross.

Mr. Sewell—I hate to hear the golden queen slandered here. I would like to speak right out in meeting and say where the golden queen comes from, and you will know what I am talking about. A golden queen from one breeder and one from another are different. If I say it comes from Doolittle, you know what it is. That queen led the yard, after coming from New York State by mail; but this year a leather-colored queen led the yard. And so it is—one year it may be one, and another year another. But those golden queens have decided advantages. One is finding the queen; another perhaps is gentleness; and those golden bees crossed with some of the other blood are very prolific. In managing and manipulating them, getting hives for them, etc., I have an idea that the 8-frame hive would be very much better for them than the 10. I have had leather-colored queens from about 5 different breeders. Some were not good for anything. Some have been very good. They are very prolific. They lay, all the year round, more than the golden, but they lay in the spring—they just fill the hive all at once, while the golden queens will lay right straight along through the year. Two years ago the flow was a gradual one all through the year, and that is the reason I think the golden produced more honey than the other bees, whose queens laid the

hive full of eggs all at once, and then later on perhaps were a little scant with their brood. But I would like to hear more of an expression, or, if the thing was reliable, I would like to know just exactly which the best bees are.

Dr. Miller—That you will never learn.

Pres. York—You will have to read the advertisements, and then try yourself.

Mr. Sewell—I have read the advertisements. I have had queens from at least 8 breeders; I do not know but from more. It is a very interesting study to me, the more different traits from different breeders, what I can produce and what I can get from the different kinds of queens. I can not always get the same thing even from the same man, of course. A golden queen has very decided advantages on one side, and perhaps the darker varieties have advantages on the other side, and it depends largely on the year, the honey-flow, etc., just which kind is wanted, and you can not always tell just what it is going to be beforehand.

PLAIN SECTION OR BEE-WAY?

“Which is the better, the plain section or the bee-way section?”

Pres. York—How many prefer the plain section? Raise your hands. None.

How many prefer the bee-way section? About 10, I think. Do you want to say anything about this?

Pres. York—Why do you prefer the bee-way section over the plain? I think Mr. Taylor raised his hand on that.

Mr. Taylor—Yes. One reason is that they are at least as good as bee-way, and I do not have to change.

Miss Wilson—They are easier handled.

Mr. Abbott—My reason is that you have to have less traps. I do not use separators. I could not use a no-bee-way section without a separator.

Dr. Miller—Why are they easier handled? Miss Wilson has handled a good many of both kinds.

Miss Wilson—When the plain sections are filled right out plump to the wood you are apt to break the honey in scraping them and getting them ready for market; and if they fall over, as they tumble over easily, they are more apt to break.

Mr. Taylor—Let me ask Miss Wilson, if they fall over, as they evidently are bulged a little, and the comb strikes—is that what you mean?

Miss Wilson—Well, it may not be that they strike that, but there may be a little something on the board that may fall on to them, just a little tiny bit.

Mr. Taylor—In regard to cleaning and packing them, if that was the case the combs would touch.

Miss Wilson—Yes, I think they would, perhaps. You have to be very careful.

Mr. Taylor—It always seemed to me—I have never tried them, I don’t want to try them—but it always seemed to me that there would be more or less difficulty in that way, that they would be slightly bulged and interfere in packing.

Miss Wilson—But in handling them and scraping them you are so apt to put your finger in them. When you handle a great many in one day it is quite a drawback.

Dr. Miller—You say when they fall over. Do either fall over?

Miss Wilson—Yes, sometimes.

Dr. Miller—Which one falls easier?

Miss Wilson—The plain section.

Pres. York—When I was in the honey business I handled a good deal of honey in plain sections, and they were put in shipping-cases just the same as the others, but I did not notice any scraping of the combs in pulling them out. Of course, in a shipping-case they are very close together, but you can begin to take them out with a knife-blade. They are put in without separators, but I could put my knife-point in and lift them out.

Miss Wilson—I have often wondered how they got them out.

Dr. Miller—These differences refer to the separator rather than the bee-way sections. Those sections are first made, and as I used them, were the same width as those that had a bee-way or notch at the sides; but the difference was made by making the separator—a wood separator— $3\frac{1}{16}$ of an inch.

Pres. York—A slotted separator.

Dr. Miller—No, a wood separator $3\frac{1}{16}$ of an inch thick, which left room for the bee in at the bottom.

Pres. York—Slatted then?

Dr. Miller—Yes. The section was a plain section, but in order for the bees to get into it they must be spaced apart, and the spacing was made in the separator. You could not use them without the separators. As you use them now, as I understand it, and I think I am

right, the spacing must be in the separator.

Pres. York—They do not use the plain separator. They use the fence separator.

Dr. Miller—The question is raised as to how to get those sections out of the case when they were packed in solid. One way is to turn the case upside down carefully and dump the whole thing out. There would be no breaking in that way. That is a little awkward. Another way is, suppose your case holds 12 sections, put in 11 sections, leave one space vacant with a little bit of separator there packed in, and you can open that one. I am not insisting that you shall use the plain sections, but I am trying to tell how those things may be done. After using a number of thousands of them I prefer the old-fashioned bee-way section. But let us be fair with it. There is an advantage which the plain section has. I remember a good many years ago seeing Mr. Heddon stand up here and talk about sections with separators. At that time he had a super in which no separators were used at all, and he said, "You take the section that has been produced with the separator. It has a lean look." And that is a fact. The plain section is plumper looking than the other. I am not sure that I think of any other advantages now, but I do think we ought to be entirely fair to the plain section, and this is a one-sided business; those who prefer the plain sections ought to be allowed to tell us why they prefer them.

Mr. Taylor—Just let them tell.

Mr. Lyman—Doctor, you mean the plain section of honey looks plumper?

Dr. Miller—Yes, it looks plumper. It is filled out fuller at the end.

Mr. Thompson—if paper is put around any section in a case it can be lifted readily, and that gives room for each of the rest.

Pres. York—I think we all understand that the shipping-case as made today, has a follower-board at the back and a wedge or paper is put back of it so they can be readily taken out.

Miss Wilson—in the cases that were sent to us there wasn't any space allowed. They just fitted tight.

Dr. Miller—I would like to hear the views of those who prefer the plain section.

Pres. York—Nobody voted in favor of the plain section.

Mr. Kannenburg—I do not care much for the plain section, but I like to see the looks of it, and in one way they are nicer to clean than the bee-way section. I handle both of them, and I have no trouble at all to get them out of a shipping-case or out of a super, because there is always space enough so that you can bend, turn a little on the side to take hold with the fingers. As far as the cleaning of the plain section goes, there is not so much propolis as there is with the bee-way section. You do not have to go into the corners so much with a knife to clean the corners out. The beeway sections are all filled with propolis in the corners, every time, and it takes twice as long to clean one super with the bee-way section as it does with the plain section.

Miss Wilson—I do not agree with you.

Mr. Kannenburg—Another thing I like, if you put the bee-way section and the plain section on the table before a customer, every time he will take the plain section.

Mr. Kimmey—I did not vote on this question, because I did not know anything about the bee-way section. My little experience has been with the plain section. As for taking them out of the case in packing, I have never had any trouble. Even before I produced any honey myself, or had my bees produce it, it always seemed to me that the plain sections were preferable. I drop into Siegel & Cooper's and I ask them what they are selling honey for, and I notice the looks, and it always seems to me that as far as appearance goes the plain sections are ahead. I know you come to weigh them there isn't the turn of your hand in favor of one or the other, and yet, as has been said, it always looks to me as if the plain had a better look than the bee-way. I do not feel qualified to speak for anybody else as to which is the better. I wish I had some of the bee-way myself, after hearing these gentlemen talk, and this lady. I do not want you to think because I did not vote that I did not have any opinion.

Mr. Taylor—I just want to say, with reference to bee-ways, there are a good many of these plain sections sold. I have sold some honey that way. I have one customer that I sold a ton to for 4 years, certainly each year, or perhaps 5 years, and he always says, "I can get

plenty of honey, but I like your sections better." and he takes my honey on that account. That is, that decides him finally.

Dr. Miller—I would like to know whether that is anything like the general experience, whether dealers do prefer it ordinarily. Have we any testimony with regard to that, one way or another?

Mr. France—Up in our State the dealers almost invariably want bee-way sections. The large complaint is that the other one looks nice, but there is not room for handling, and they press in with the fingers, and they are hurt by handling.

Miss Wilson—The man to whom we ship our honey said he did not want any more plain sections.

Mr. Abbott—I think they have not emphasized the main trouble. It is not the section as it stands by itself that bothers me. The old bee-way section is all right. It is the traps that must go along with it in order to use it. They are frail and are easily broken up. You can't clean them, and they are a source of constant expense. I think our people probably make as good fences as anybody, but I throw away—well, I wouldn't say how many out of every lot they ship me, because they get broken, and I seldom ship out a crate of hives to anybody but what there is some complaint about the fence separators being broken. You can not handle the no-bee-way section without the slotted separator, or the old Armstrong separator which had a slot in the bottom and made the finest looking section of anything I ever saw. But there was too much lumber in that beehive—it cost five or six dollars in the flat, and you could not afford to pay that much. It is the things that are necessary in order to use them that make me object to the plain sections.

Dr. Miller—I must say that this is really a great surprise to me. I try to keep up with the procession and know what is going on, and I read and find that the plain section is away ahead, that it is the thing to use, and then I come here and find a lot of old fogies who say that the bee-way section is the thing. Their grandfathers started with the bee-way sections and they are going on with them, and it seems to me that somebody ought to do a little missionary work and wake them up and let them know they are not up to the times;

that the plain section is what we ought to have.

Mr. Taylor—Why not do the work on the manufacturers of the plain sections?

Dr. Miller—Well, there is a point. Seriously, it is a surprise to me to hear the expressions here this morning, and I would like to ask this question: Suppose the plain section is very much better than the other, there are two ways for accounting for the apparent feeling with regard to it here. One way is to suppose, as I have already supposed, that there are a lot of old fogies here that don't know what they ought to do. There may be two ways still. One is that they are not old fogies, but they never had testimony enough to make them think it worth while to try the plain section.

Mr. Lyman—Some of us have been through the mill, Doctor.

Dr. Miller—I was going to say that there is still another way, that they have tried them, and, after trying them, they believe that the bee-way sections are better. I would like to ask how many have tried both kinds. If you will allow me to see the hands—just keep them up and let me count them—12. Now of those 12 I would like to ask two questions. I know that I have an answer to both of them, but I want to get something definite. How many of that 12 prefer the bee-way section? Let me see the hands—8. How many prefer the plain section? 3. How many do not care which? 1.

Mr. Abbott—Let me tell you another thing. Out of 10 carloads of goods sold down in Missouri, we will sell probably a wagon-load of plain sections—not more in 10 carloads.

Mr. Kannenberg—It might be that they like the bee-way section because they started in with it and hate to change to the plain. It costs money to change.

Mr. Taylor—I want to have the Doctor put another question. If a man is producing thousands of pounds of comb honey and has to handle it, that is one thing. If he is producing 200 or 300 pounds, that is quite another. I want you to ask these 3 gentlemen here who have voted in favor of plain sections, how much comb honey they handle.

Dr. Miller—Will they kindly tell us.

Mr. Thompson—A very small amount. Perhaps 2 tons would be the most in any one season.

Mr. Pease—40 tons.

Mr. Bloom—The lowest I ever had was 2 tons.

Dr. Miller—Let me state that it still remains a surprise to me.

Pres. York—Maybe you are easily surprised, Doctor.

Dr. Miller—I am not easily surprised.

Mr. Arnd—My experience is the same as Mr. Abbott's, about selling sections. We sell, I think, almost 10 bee-way sections to 1 of the plain.

Dr. Miller—My reading makes me believe that the plain sections are ahead as to number, and as to quality.

The Members—No! No!

Mr. Taylor—Doctor, you have read enough and written enough to know that there is not much dependence to be put on printing! [Applause.]

Dr. Miller—There is another point. There are a good many bee-keepers who have commenced lately, and they want to take up the best thing. Here is Mr. Kimmey, he is a man who is looking out for the best—he reads, and he knows that the plain sections are away ahead, and he takes the plain sections. He is pleased with them. He doesn't know anything about any others. I don't blame a man of that kind for thinking that the plain section is the best. Now the question is whether we are doing the right thing not to try to let the whole truth be known. The whole truth is not known on that.

Mr. Lyman—I started with the plain and I shall use the bee-way hereafter.

Mr. Whitney—I do not know anything about the plain section, but Mr. Abbott says that he sells very few of the plain and a large quantity of the bee-way. We lose sight, I think, of this one fact, that the plain section has just been introduced, and it takes time, even if you introduce a good thing.

Pres. York—Especially in Missouri! Mr. Abbott lives in Missouri, you know. [Laughter.]

Mr. Whitney—I think it is hardly fair to say that the plain section is not as good as the bee-way because we do not sell quite as many of them at the present time. It takes time to introduce a good thing—we all know that. I don't know anything about the plain section. I have not used anything but the bee-way. Some old bee-keepers up my way, who are interested a little in bee-keeping, got the plain section. They do not like them, but they are using them

because they have a supply on hand. They think that the fence separator is such a frail thing and breaks up and annoys them a great deal; but I think that if the time ever comes when we get a fence separator that will be substantial—and I think that will come—they may be regarded as the best sections to use.

Dr. Miller—if you will allow another question, it will help bring out the point that Mr. Whitney makes as to the time required. That is true. It takes time to introduce a new thing, and a good thing. Now the question is, Is the number of plain sections increasing regularly through this time? Will Mr. Arnd and Mr. Abbott tell us?

Mr. Abbott—No, sir. It is the people who have tried them who object to them the most. I send them out once in a while to people as samples in the hives, and they always say, "Don't send me any more of those traps."

Mr. Arnd—I have not had real experience enough in the bee-supply business to know, because I have been in it only 2 years.

Mr. Abbott—I have been in it 20 years.

Mr. Kannenberg—The fault is this: I find with the plain section that you can not produce as much honey as with the bee-way section, because the bees have to fill out the combs on those sections, but they won't get as much honey in it, because when you weigh one super, and then the other, you will have less honey and more wax, more wax to draw out, more comb to draw out. It takes a longer time for the bees.

Dr. Miller—I don't believe it.

Mr. Kannenberg—Doctor, you take a super full of plain sections, and take a super full of honey in the bee-way section. Which will have the most honey in it?

Dr. Miller—Do you have separators in both?

Mr. Kannenberg—Yes. You will have more honey in the bee-way section than you will have in the super full of plain sections, every time; and it is because of the drawing out of the comb.

Mr. Wilcox—I have a little evidence that bears on this question, although since the fence separator came into fashion I have discontinued producing comb honey; but I have judged honey at the State Fairs in recent years, and I invariably give the premiums to the

no-bee-way sections. Noticing that fact myself, I began to inquire of exhibitors as to the conditions in the market, and so far as I can learn nine-tenths of them prefer the no-bee-way sections; that is, that they sell better on the market—the plain sections; that they look better and sell better, and I am sure that, for some reason which I do not understand, they looked better to me on exhibition, and I gave them the premium. They were better filled out.

Mr. Kimmey—Will Mr. York give us his opinion, founded on his experience?

Pres. York—I have not used very many, but I like the plain section better for cleaning. I have had the same experience as Mr. Wilcox in judging at fairs.

Mr. Kimmey—How about the sale?

Pres. York—I do not think it makes any difference in the sale, not from my experience in the groceries in Chicago, when I was in the honey-business.

Mr. Kimmey—I would like to hear from Mr. Pease, too, both as to the requirements of the trade, as to bee-ways and no bee-ways, and as to the quantity of honey.

Mr. Pease—I find that the groceries, as a rule, make very little distinction as to a matter of preference between the bee-way or no-bee-way section. The grocer in Chicago buys his honey by weight, and sells it at so much per section. They do not want a honey full weight, but the consumer who goes to the grocery store to buy honey—you put a plain section and a bee-way section side by side, and 9 times out of 10 he will take the plain section, even if it weighs less than the bee-way.

Mr. Moore—The grocery trade wants a section weighing 12 or 13 ounces, and 12 or 13 ounces looks vastly better in a plain section than in a bee-way section.

Mr. Whitney—I have two styles of bee-way sections. I have a big super that belongs to the old Gallup hive, and it takes a section $4\frac{3}{4} \times 5\frac{5}{8}$, and I think if you place a section of that kind by the side of a plain section they will take mine every time. It will look larger although it is not quite as wide, but it is a little taller, I believe, judging from the appearance, of course. You take a $4\frac{1}{4} \times 4\frac{1}{4}$ bee-way section and it looks lower, and they decide in favor of the plain section because it is tall, but you take the bee-way section that is as tall

as the plain section, and I think they will take the bee-way section, every time.

INTRODUCING QUEENS.

“How do you introduce queens?”

Mr. Taylor—I seldom introduce a queen except in the spring. If I want to change a queen, or the colony is queenless, I open the hive and observe the conduct of the bees, and you can tell, if they have a peculiar way of acting, running together, perhaps running towards your hand a little, with their wings lifted and a slight shaking motion, you can turn your queen right in. They are all right. Sometimes, if I am in doubt, I will put a queen-excluder on the top, let a few bees come up, let the queen loose and decide then. I hardly ever cage a queen in the spring, because the bees are so anxious to get to work that they will almost invariably accept the queen; in fact, I do not know that I remember when a colony that was queenless refused to take a queen early in the spring.

Mr. Abbott—Suppose you had a black queen and you wanted to give them an Italian.

Mr. Taylor—Take her out and wait a day or two to let them find out they had lost a queen. They are terribly anxious to get a queen in the spring, and that running together a little and a slight shaking of the wings shows that they are looking for one.

Mr. Abbott—I supposed that among all the progressive bee-keepers the one most in advance and at the forefront was R. L. Taylor, of Michigan.

Mr. Taylor—No; I am a fogey, sir.

Mr. Abbott—But I see he says that the hive should be left for a day or two for the bees to find out that they are queenless. Now in the name of common-sense, I want to ask *why*. I asked that question, and I asked it that I might bring out just that one idea. *Why* make a colony know it is queenless? There is something to this. You are wasting a great deal of time when you wait 2 days for the colony to find out that they are queenless. Now if Mr. Taylor will tell *why*, perhaps I will say something more.

Mr. Taylor—Two days early in the spring do not count very much, and you do not have to wait to see whether they are ready to receive her or not. It is the easiest way. Of course, I remember at one time that I was hand-

ling some bees, when I used to fool with them, and had a lot of them shaken on the ground, and in stumbling around with my big feet I must have hurt the queen. I noticed before I got through the colony that the bees were in a turmoil. They were running up on the front of the hive, and on the side, and looking around as lively as possible. I concluded something had happened to the queen. I looked on the ground and found I had stepped on her. I got another queen and they were perfectly satisfied with the other queen.

Mr. Abbott—I have been trying for 20 years to get into current bee-literature and bee-books this one statement, that it is not necessary for any colony to be made queenless in order to introduce a queen safely a day, or an hour, or a minute, except what time is necessary between pinching the queen's head off and turning the other queen out, or putting her in a condition to get out. After 20 years' trial I do not think that that statement is in a bee-book, or in any bee-literature that has not come directly from my mouth in reporting something that I have said in a convention about it.

Dr. Miller—Allow me to speak and say right here that Mr. Abbott perhaps never reads anything I write, or he would not say that sort of thing.

Mr. Abbott—I beg your pardon, then. It is not in any book.

Dr. Miller—It is in the American Bee Journal.

Mr. Abbott—I have said it in the American Bee Journal several times, commenced about 25 years ago, and I have been saying it ever since. I want to say again, for the benefit of those who have not heard me say the same thing, that I never make a colony queenless. I do not rear queens any more, but on every cage I find directions, and those directions I invariably tear off because they say to make the colony queenless 48 hours, and then introduce the queen.

Dr. Bohrer—Do you simply remove the queen, destroy her, and turn the other one loose?

Mr. Abbott—No, sir. When I have a queen or a half a dozen queens that I want to keep, I put them on top of the frames of a colony and leave them there 2 or 3 days. If I want to introduce one of those queens I hunt out the old queen, pinch her head off and

turn one of the others free. If I wanted the old queen free in the hive day after to-morrow, having introduced one today, I would take that old queen out, put her into a cage and turn another one free, and in a very little while the queen in the cage is out on the combs laying, and the bees never know they have been queenless. They have no feeling of resentment towards those queens in the cage any more than they have the one free on the combs. They are just as friendly with any one of the 5 queens on top of the frames as the one in the hive laying eggs, and they take one just as well as another. What is the use of killing the queen and having them start queen-cells, which they will in 48 hours, and take the chances of their killing the queens? When they start cells they are antagonistic to any queen, even their own queen.

Dr. Miller—How long after you put that queen in before the bees liberate her?

Mr. Abbott—I fix it so that she will be out in an hour—not to exceed an hour.

Mr. Whitney—I purchase a considerable number of queens usually, and I have been anxious to find the best way of introducing queens, having tried various methods. I heard Mr. Abbott give his method of introducing queens here, a couple of years ago, I think, and thought I would try it. I sometimes get a half-dozen queens in rainy weather. Perhaps there will be 2 or 3 days of bad weather; I can't introduce them. I know what colonies I wish to introduce those queens to, and I distribute them around over the frames and leave them there till the weather clears up so that I can introduce them, and then I remove the old queens and let young queens free immediately. I have never lost a queen, when introducing them in that way. Of course, I would do the same thing if the weather were not bad, but it is a convenience if the weather is bad, to take this plan of doing it, and it never fails under any circumstances with me. Always place the queens over the frames of the colony in which you wish to introduce them, without removing the little pasteboard or cork, and when you get ready to introduce them, remove the old queen from the hive and let the queen free immediately; and, as Mr. Abbott has

said, you do not then stop the production of bees in the hive. The old queen goes on laying all the time up to the very moment of her exclusion from the hive, and the new queen takes her place. I think it is the best method I have ever known.

Mr. Wilcox—If you could not place her over the colony, would you place her between the combs?

Mr. Whitney—Yes, you might do that; but I have placed the cage at the entrance of the hive. My hive-entrances are wide, but just about high enough.

Dr. Miller—You could not do that in cool weather.

Mr. Whitney—Not very cool weather, no. I would not do it in cool weather. But I merely mention that I have done it in warm weather, but with my kind of hives there is scarcely any necessity for it.

Mr. Wheeler—What do you do with the attendant bees—bees that are with the queen? Do you kill them?

Mr. Whitney—O, they take care of themselves, or the other bees will take care of them. I don't pay any attention to them at all.

Mr. Abbott—Let them alone. They will do no harm.

Mr. Kimmey—You say turn the queen loose immediately; make the opening so that she can walk right out?

Mr. Whitney—Yes; run a pencil through and puncture the queen-candy and let the queen out. She will usually remain in the cage for several hours, and the bees will go in. They do not often run out immediately, but I will let them free and turn them right out. Ordinarily they remain in the cage for several minutes, or hours, possibly.

Mr. Hutchinson—I think that the idea of letting the queen free at once without leaving the colony queenless until they find out they are queenless is probably all right. The only reason that I could see in keeping a queen caged 2 days or more before letting her out is that sometimes it seems as though the mood of bees changes. You will come to a hive sometimes with a queen-cage in it, and you will find bees sticking right over the cage like so many burdocks, and perhaps the next day they have changed their mood and are walking peacefully over the cage. If you release the queen when they are inclined to bother her, they might kill her. I

think it is much better never to let a colony know they are queenless. Don't leave them queenless long enough so that they find it out. I introduced a queen last fall after the honey-flow had ceased, when it is somewhat different. I went over the hives and found the queen. As soon as I would find the queen I would kill her and open that cage at one end and fill it perhaps an inch or an inch and half with sugar candy, and put it back in. I do not suppose those bees knew they had a new queen, and out of the 40 I lost 2 queens. Those were strong hybrid colonies.

Mr. Moore—Mr. Hutchinson, what would you do now to save the queens to those 2 strong hybrid colonies, in addition to what you did before?

Mr. Hutchinson—I don't know that I could do anything.

Mr. Whitney—I have introduced a strange queen to a queenless colony and she was accepted immediately. There would be a buzz of bees all over the frames and down through the yards the moment she struck the top. An exception, of course; that would seem to be a sort of freak of the bees. I don't know why they accepted her so suddenly or willingly, but they did.

Mr. Taylor—They will almost invariably do that in the spring.

Mr. Abbott—Never turn a queen free if you have one or more cages, if the bees are not walking around naturally, no difference whether they have been on there 1 day or 3. Never turn a queen free under those circumstances. Simply close up the hive. You have the old queen laying. That is the advantage of having a queen on top. Tomorrow, if all is quiet, and they are walking around naturally, hunt out the old queen. If they have had 48 hours and have started queen-cells, then if you can't put her in, it leaves another day to work on the cells.

Dr. Miller—I want to say just a word on introducing as Mr. Abbott advises: I think I objected at one meeting here that there was some delay in doing that way, but a good deal of experience since has made me appreciate very much the advantage of having a queen in the hive some time—that is, the new queen in the hive—some time before the old one is removed. As probably all here know, it is not an easy thing to introduce a virgin queen, and since that time I have introduced a good many virgin queens,

using simply the advantage that Mr. Abbott speaks of, of allowing that there is just a little advantage in having the new queen get acquainted while the old queen is in the hive. When you take away the old queen you are throwing them into an abnormal condition and they are likely to show fight. When she is put in the hive beforehand, they are indifferent to the new queen. I don't know if it is because she gets the scent of the hive, or for any other reason, but I do know that a virgin queen, or any other queen that has been imprisoned in the hive for some time while the old queen is present, will be accepted kindly if freed by the bees a short time after the old queen is removed.

REQUEENING OR SUPERSEDING QUEENS.

"Shall we requeen colonies having old queens, or let the bees do the work of superseding?"

Dr. Bohrer—It is questionable when a queen may be considered old. I have had queens 4 years old that were very prolific and laid as many eggs as any queen I have, and I think it would be policy for a bee-keeper to watch his queens and see what they are doing. If, for any cause they do not seem to lay the requisite amount of eggs at any age, I would supersede them; but as long as the queen is fertile and in good condition, keeping the colony up, I would not molest her, even to 3 or 4 years old, because from my observation they will lay eggs until they are that old; so that there is no fixed rule about that, perhaps.

Mr. Whitney—I suppose that when one discovers drone-larvæ in worker-cells it is a pretty good indication that the queen ought to be superseded, whether she is old or young. Usually you may find those in a colony where there are old queens, but I have a case which I have written up twice, and some people questioned my accuracy. I had a queen that I found in the spring laying drone-eggs in worker-cells. She was only a year old. I thought very much of her. She was the daughter of the old queen that so much has been said about, and she looked very poor. She came out poor in the spring. I commenced feeding her bees with good, rich honey, a little at a time, each night, and within 2 weeks she was laying worker-eggs in worker-cells, and dur-

ing that summer I made 4 colonies of bees from that queen.

Dr. Miller—Does Mr. Whitney think that an exceptional or a usual case?

Mr. Whitney—It was the first I ever knew, or ever heard of.

Dr. Miller—It is the last you will ever know of.

Mr. Whitney—Some say, "You must have been mistaken; it must have been a young queen that superseded the old one, and you thought it was the same old queen." The fact is that queen was clipped soon after she commenced laying, and I watched her from that time until she died, and it was the same old clipped queen. A doctor in Switzerland has taken the question up and asked me whether I was certain it was that queen. He said it was a very unusual thing, and something he never heard of. But 2 of my old bee-keeper friends were there when I took the frames out of that hive, and showed the worker-comb full, or two-thirds full, of drones, and they said, "Isn't that too bad?" Well, I thought so. I expected to have to supersede the queen, but I did not. I kept her that summer and made 4 good colonies of bees from that queen by feeding. She was a young queen, though. I would say that an old queen should be superseded, but the question is, What is an old queen? Some queens are old at a month, and others not old at $2\frac{1}{2}$ years. It depends upon how hard the queen has been worked. A good queen you might keep 2 or 3 years, and with a poor honey-flow she would not exhaust herself for 3 or 4 years.

Mr. Hutchinson—What I want to know is, shall we do this work, or shall we leave it to *the bees* to do it? Who has been at work superseding the queens themselves? Mr. France, do you supersede the queens or let the bees do it?

Mr. France—As a rule, I supersede them.

Dr. Miller—Does a queen do better work, as a rule, in her first or her second year? That will help us a little in deciding, if we can get some testimony about that.

A Member—The best queen I had last year was 3 years old. She made the record of the yard.

Mr. Taylor—My object in keeping bees is to make something out of them. I want to make the largest percent on my labor, efforts, and expense, that I

can, and I think I can make more by letting the bees do the work; and now-adays I do not practice meddling with the queens except in an occasional—very exceptional case. Of course, once in a while, when I see that there is any need of a new queen, and that the bees are not likely to supersede the queen themselves immediately, I may interfere! but I let the bees do that work, and I do not believe that I could improve much on it any way.

Mr. Whitney—If you find you have an old queen, and she is liable to be superseded, perhaps in the fall, it seems to me it would be a good deal better to supersede her in August than to let the bees supersede her in October when there are no drones flying, when you are liable to have a virgin queen there, to be a drone-layer in the spring.

Mr. Taylor—That is not likely to be the case. Bees supersede their queens in the summer-time. Of course, that is the time to do it, and they seem to know that that is the time to do it. Of course, there may be exceptional cases, but I should very much dislike to overhaul 50 colonies of bees to find out whether there was one queen that needed superseding, because the bees were going to supersede her in the fall. It doesn't pay.

Mr. Whitney—Keep a record of the age of the queens.

Mr. Taylor—That makes lots of work.

Mr. Wilcox—I am astonished, and I want to know if anybody else has ever thought of such a thing as queens being superseded in October, a month or two after the season's harvest was over. I did not know that such a thing ever happened except by accident.

Mr. Abbott—I confess I am astonished. I am like Dr. Miller now. I am more astonished than he was, to think that any one would advocate at this time that we should let nature alone. Let me give you an illustration from the dairy business: The Babcock test has eliminated from the dairies of this country about half the cows that were in the hands of intelligent dairymen, because they were eating more than they produced. It is not necessary to overhaul a colony to see how old the queen is. It is unnecessary to "count the rings on her horns" as you do on a cow to see how old she is. It is only necessary for the intelligent manipulator

to know that there is a colony, No. 22, that is not paying its way. If 22 is not paying its way, 9 chances out of 10 the queen is responsible for the non-payment. An intelligent answer, it seems to me, would be to take off the head of No. 22's queen and put one in there that you thought was better. That would be improving on what we call the "natural method," just as the dairy people by selection have improved the Jersey cows and the Holstein cows until they have nearly doubled the butter-production of the Holstein herds. If they can double the butter-production of the Holsteins by careful selection, can not the bee-keepers and queen-breeders eliminate the poor queens and double the production of the colonies of bees in the country in the same way? It seems to me we can. This is an age of progress and scientific investigation, and we ought to take advantage of it, it seems to me. Take the heads off the queens whose colonies are not paying their way.

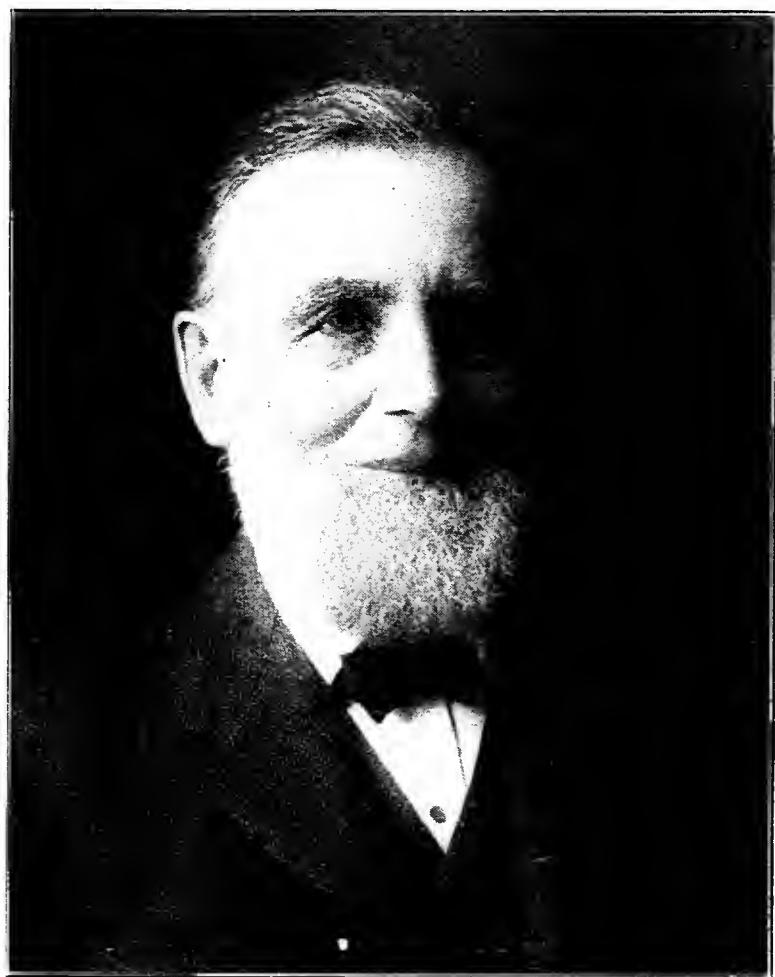
Mr. Taylor—I do not like to take up the time of this Association in talking. I like to say a word once in a while, but I do not like to talk so much. If you are willing to bear with me a few minutes, I will try to explain this thing that Mr. Abbott seems to be entirely astray on. Now the two cases are not parallel at all.

Dr. Miller—Correct.

Mr. Taylor—I am glad you are with me, Doctor. They are not parallel at all. It will take me 2 or 3 minutes to explain why they are not parallel. Take cattle. I suppose originally they were in a wild state, and they had long horns and they were fleet of foot, and they had great courage, and they were rustlers. That is, they were fitted to their environment. They were so constructed and so developed that they were able to survive under the hard circumstances in which they were placed. They were able to fight. They were able to escape their enemies by flight, when it was really necessary. They were able to hunt their food in difficult places. Now, then, suppose Mr. Abbott had some of those cattle and he wanted to develop them in the line of fighting and rustling for their food and fleeing from enemies, and this sort of thing. Would he be so particular about picking out animals that were not fleet and not fighters? Why, no. He would not expect to de-

velop them very much. They have been developing for ages and ages. The weak ones have gone down always. They could not get food. They could not escape their enemies. They could not repel their enemies, and they have developed, I may say, to the highest possible stage of that sort of existence. Now take bees. The bees have not been

deal better than that. They are developed. Of course, we may do a little something in the way of increasing that, but we perhaps better do it negatively. We ought to let those that are not doing well perish of themselves, as they will. We make a mistake in nursing up those that are not able to survive of their own efforts, and feed-



DR. C. C. MILLER, MARENGO, ILL.

developed as fighters particularly, except what was necessary to keep out certain enemies, but they have been developed from the very first for the production of honey, because upon that alone has the existence and continuance of the race depended. Now I know it is against the generally received opinion among bee-keepers, but bee-keepers are all astray in this everlasting talk about improving the honey-gathering qualities of bees. Why, we can do a

ing them and trying to get them through the winter, and all this sort of thing; but if we turn our attention to developing bees in the way of right capping of honey, in the way of making white comb honey, in the way of properly filling their sections, making straight combs—for there is quite a difference in that—and in some other points that I might mention if I could take the time to do it, I tell you we would make a big improvement in bees, for the rea-

son that the bees have not found it necessary to develop in these lines. It didn't make any difference to them whether the comb was white or dark, or what was the matter with it, only that they had honey where they could get it. Now I say, if I had any influence among bee-keepers I would have them turn their attention to doing something that there was some prospect of their being able to accomplish.

Dr. Miller—I want to apologize to Mr. Taylor for agreeing with him. [Laughter.] I am very sorry I said a friendly word toward him. Mr. Abbott, I think, switched off entirely from the question, and when Mr. Taylor followed and drove the wild cattle, he went still farther. The question was raised whether it is better to allow the bees to supersede, or for the bee-keeper to take the matter in his own hands. Then Mr. Abbott raises a very important question and he did not say too much about that, and I am with Mr. Abbott and dead set against Mr. Taylor, that he can not improve the bees. But they are both away from the question. The question is not whether we are going to improve our bees, but whether, with the bees we have, it is better for us to take the matter of superseding into our hands or leave it in the hands of the bees. I regret to say I am with Mr. Taylor in thinking it is best to leave it to the bees! [Laughter.]

Mr. Wheeler—I stand for Mr. Taylor.

Dr. Miller—Keep to the question now.

Mr. Wheeler—No, I think for the benefit of the convention, if you will allow us a word about this very important question—

Dr. Miller—Yes; but let us finish this other question first, and then go to that.

Mr. Wheeler—Mr. Taylor and Mr. Abbott have been talking on a question that I think is very vital to bee-keepers.

Mr. Todd—Take it up after lunch. It is a big question they are discussing.

Mr. Wheeler—Just as you people say. I would like to say a word about the requeening of bees.

Mr. Taylor—I would suggest to wait until it comes up. We will have it up after this, I presume.

Mr. Whitney—I simply wish to reply to Mr. Wilcox in regard to superseding. Perhaps I made a little strong statement, but when I close up my hives with a clipped queen and in the spring

I find a young queen with two good wings, I conclude that the queen has superseded.

Mr. Wilcox—I asked that question for the interest of the published report, not particularly for the bee-keepers present, but it will be read by the people all over the world, and I did not want it to appear, unless it was true, that the queen was superseded in October. I did not know it was.

The report of the Committee on Resolutions was read by Mr. Hutchinson, which, on motion, was adopted.

A photograph was taken of those present, and then an adjournment until 1:30 p. m.

SECOND DAY—AFTERNOON SESSION.

After calling to order, Mr. Lyman described his management of the hive during the swarming and honey season.

Dr. Bohrer—What is the principal advantage you claim for that arrangement?

Mr. Lyman—It keeps the bees all at work in the front brood-chamber undisturbed, and at the same time prevents swarming. In my experience, after you make this change, there is no danger whatever of the bees swarming for at least 21 days.

QUEEN FERTILIZATION AFFECTING DRONE-PROGENY.

“Does the fertilization of the queen affect her drone-progeny?”

Dr. Bohrer—I wrote that question, and the reason I did so was not to make an attack upon any queen-breeder at all, nor upon any author, but to call attention to what I regard as an error. I will name the gentleman, and I regard him as a high-toned gentleman, and a very honorable man—stands so, I think, before the bee-keeping fraternity throughout the United States and everywhere he is known. I have reference to Mr. Doolittle. When I first commenced to read bee-keeping and study it carefully, I was attacked through the press several times. I went all the way through the State of Michigan and discussed it before the Michigan Bee-Keepers' Association, at the request of Prof. Cook. Two or 3 years ago I wrote him asking whether he had experimented any concerning that matter, that is, the effect the fertilization had upon the queen's drone-progeny. He said he had not only experi-

mented, but he had proved my theory to be correct. Mr. Doolittle takes the position that it does affect the progeny of the queen, and I believe he says the fourth generation has produced a queen no one could tell from a hybrid. While I believe he is candid and sincere in his conclusions, the manner in which his experiments were conducted I am satisfied was erroneous. I doubt very much whether Mr. Doolittle is so situated that he can have four generations of bees and the fourth queen successfully fertilized where he is situated, on account of the fact that there are hybrid bees all around him, and on that account I think it is true that the drone-progeny is affected by her fertilization. The spermatozoa are lodged there—never escape at the will of the queen. When depositing a worker-egg she fertilizes that at will as it passes the mouth of the spermatheca. To suppose that affects the drone-progeny is to suppose it becomes a part of her system, that the spermatozoa become food and consequently part of the system of the queen. That is an utter impossibility. The revelations of the microscope prove the contrary, and I am satisfied that Mr. Doolittle, although honest and sincere in what he teaches, is mistaken, and I would not like at this time to have the idea go out that such a thing is possible, because it is not.

REQUEENING OR SUPERSEDING QUEENS.

Mr. Wheeler—Before dinner I was going to speak of the value of changing queens. We read a great deal, and it was the talk of some of the gentlemen before dinner, about when a colony showed weakness or anything the matter with it, to change queens, and by selecting the right queen you improve your stock of bees. That is right to a certain extent, but I think it is carried too far. In the spring, quite often when the bees come out of the cellar, they will fly together and are quite apt to kill off the queen. There will be a very strong colony of bees, and when I look a little later they will have their queen killed, and there is a great lot of bees, and what am I to do with those bees? They are losing their time. I will look around and find a colony withered away—a few bees with a queen. I put that queen in the colony with the colony of bees and that queen will lay eggs, when she gets started, for all the bees

that are there—fill 2 or 3 hives. If she had been left with that little colony, her stock was bad and they were not saving. I think that the bees have a great influence over the queen. The care they give a queen determines how many eggs she will lay, and determines her life as long as she has her youth and strength, and I think there is a great deal too much stress laid on the point of the queen being to blame for a colony being weak and dwindling.

PROGRESS OF BEE-KEEPING.

"Have we made any progress in our industry in the last twenty-five years? If so, what is it?"

Dr. Miller—I think we have made some progress right in that very way, if Mr. Wheeler will pardon me, in trying to do something toward getting better stock. It is all very true that it makes a big difference. You put a queen into a little handful of bees or with a strong colony—she is a different queen altogether. But, after all, there is a material difference in the queens themselves, and I would deprecate the idea of trying to discourage any one from doing all he can to improve his bees by getting better stock. As far as improvement is concerned, I think we have made some changes within the last 24 hours, in our views—some of us. There is a change going on. I am very sure that I know some things I did not know 25 years ago, and I am very sure that there are some things I do not know now that I thought I knew 25 years ago. Whether it is an improvement or not I am not so certain, but there are changes going on, and when we are not standing dead still there is a possibility of our improving, so that I think the thing is hopeful that we are going on a little.

Mr. Wilcox—It is 25 years or more since I commenced attending the "Northwestern" convention and other conventions in this city, and as I compare what I have heard today and yesterday, with what I heard then, I am very emphatically of the opinion that the great mass of bee-keepers who attend conventions have made improvements, have improved themselves in knowledge. At that time half a dozen men would run a large convention. The rest knew nothing, or said nothing, anyway, and did not seem to understand fully what they heard. I am sure that

bee-keepers as a whole are advancing. They are better advanced, on an average, better educated in the science and art of bee-keeping; and when he says "we" I suppose he does not mean, has there been something new learned that was never known before? but have we, the bee-keeping industry, learned anything in the last 25 years? The most of us have.

Dr. Bohrer—I was, I believe, in the first bee-keepers' convention in the United States, and I do not know but one other man now living that was in that convention. That was Mr. M. M. Baldridge. I am satisfied there is great progress in one particular. Then it was almost impossible for a bee-paper to live. Now there are 5 or 6. I hope the subscription list of the American Bee Journal is much greater than it was then. I was one of its first readers. There are other bee-papers. Gleanings has a good circulation. Mr. Hutchinson's paper has a good circulation. There are thousands of people reading bee-literature now. Now we do not call a man insane for paying \$10 for a queen in order to Italianize a colony of bees. So there is progress shown in that respect.

Pres. York—I think Mr. Taylor can remember 25 years. Does he think there has been any progress made?

Mr. Taylor—Why, yes. You can't stir around 25 years without knowing something more than you did before.

Pres. York—if so, what is it? is the question.

Mr. Taylor—That would be a pretty long story if I told it. We have made a great improvement in hive-fixtures, for one thing. We get our honey in a great deal better shape than we used to. When I commenced keeping bees we would have a box made of half-inch stuff to reach across the hive.

Dr. Miller—You are going back more than 25 years, now.

Mr. Taylor—Not much more. Have a hole in one side and two pieces of glass on the end and a board laid over the hive, with a couple of holes in it; set two boxes in it under the cap on top of that board. There is quite a difference between that and the comb honey that we produce now. I might go on and tell you about 20 things of that kind.

Mr. Todd—How have the average tons of honey increased in 25 years?

Mr. Taylor—Well, they used to tell

some big stories 25 years ago. One thing we have lost in—we do not get so much per pound. I have paid 20 cents per pound for honey in those old boxes, and some of it was not very good at that. A good many of us have learned a good many things, and some of us have learned a good many things that are not so, I think. But, on the whole, of course, we have made a wonderful improvement.

Mr. Abbott—I asked that question to bring out a point. It has not come out yet, so I will see if I can not get it out. I was just thinking over what growth and progress had been made in 25 years. It is 23 since I came from the East into the West. The growth of the industry as a whole is simply remarkable, when you think of it, the way it has spread and the way it has been reaching out, the growth of a factory here, a factory there, and factories do not grow for the production of anything unless there is a demand. The factories sometimes push ahead and introduce new things, and I think that the manufacturers of bee-supplies have done more for the country than any other class of individuals, or more for the bee-keepers of the country than any other class of individuals, owing to the fact that they have pushed to the front. They have pushed to the front some things that are worthless from my standpoint, but they are not worthless from the standpoint of other people, and therefore they are good. If a man puts to the front anything people want, he is a benefactor. When we think about the things that were not in existence, that were not obtainable 25 years ago, that are a help to the bee-keepers today, it would take the whole afternoon to tell about them, and these things have come to us on account of the push and energy of a half a dozen men in the United States. Some of our people say they have gotten rich, and are bloated bondholders, and have got more factories and great institutions, and they have done great things, and they ought not to be permitted to speak. They have gotten rich, they have made a few dollars, but the bee-keepers of the United States are millions of dollars better off than they would have been had these people not existed.

AGE WHEN QUEEN DOES BEST WORK.

"How many think a queen does her

best work in the first year?"

Pres. York—All who think so, raise your hands. 3. How many think a queen does her best work in her 2d year? 9.

Dr. Bohrer—I do not raise my hand in either case, because I do not know. My observation has taught me not to be positive about that.

Dr. Miller—Maybe somebody thinks the 3d year.

a queen to a colony with laying workers?"

Mr. Wilcox—We don't want to.

Dr. Miller—One way is to introduce a virgin queen just out of the cell. Almost invariably, if not invariably, she will be accepted.

Mr. Whitney—I asked that question, because last season I had a little experience with a laying-worker colony,



MRS. N. L. STOW, EVANSTON, ILL.

Retiring Vice-President of the Chicago-Northwestern Bee-Keepers' Association.

Pres. York—All who think the 3d year raise your hands. I do not see any one on that.

Dr. Miller—with that in view you may add one more to the 2d year. I did not vote. I know now!

Pres. York—You wanted to see which way it was going?

INTRODUCING A QUEEN TO A LAYING- WORKER COLONY

"How shall we successfully introduce

and I had a great deal of trouble. I was removing some queens from other colonies for requeening, and I thought I would use those to test that laying-worker colony, and I introduced one in the usual way, kept her until I thought she had been recognized by the bees, and then I let her free. They killed her in a few minutes. Then I tried another plan. I took the bees all out and shook them on the ground at a distance, carried the combs back

and introduced another of the same kind of queens, and the bees came back and killed her. I took the frames out of the hive-body and put them into supers. I filled up the lower story with frames of empty comb and put the queen in, put a queen-excluder over her and set the super of laying workers right on top, and they accepted the queen. But I guess it would have been better if I had broken up the whole business. I think that is the better way.

Mr. Wilcox—I said I did not wish to, and I do not; but I have done it a great many times by introducing a comb of hatching brood and about 48 hours after introduce another comb of hatching brood, and those hatching bees usually destroy the laying workers, or they cease to be laying workers, and will accept a queen or queen-cell. It will not work every time, but it does in a majority of cases. Sometimes I try the third or fourth time. Meanwhile they are hatching their bees.

Mr. Whitney—I had forgotten that. I tried that very thing. I put in one frame and then another, but they did not produce any queen-cells at all, and I just adopted the other plan.

“What percent more honey can be secured with the Danzenbaker than with other hives?”

A Member—Not any more.

“Which is best, to increase by natural swarming or artificial?”

Dr. Miller—It depends altogether upon circumstances, the man and his desires.

Mr. Abbott—Locality?

Dr. Miller—Yes; a great many things come in.

HIVES IN CELLAR—PUTTING OUT BEES.

“Should hives be set on an incline forward in the cellar? What are the conditions indicating the proper time to set them out in the spring?”

Dr. Boher—Yes, I would say to the first; and second, any day in March that is warm enough for the bees to fly out. That is in central Kansas. Farther north it would perhaps be too soon.

Mr. Taylor—As I set them I would not incline them. I set them directly up one on another. As to taking them out, Mr. Wheeler speaks of when he sets them out, they gather into the hives that are not their own. I can tell him how to prevent that. Do not take them out when it is warm enough for the bees

to fly. Take them out rather early in the season, and taken out when it is too cold for them to go out of their hives. I generally take them out about the last of March and they are quiet, just as quiet out there on their stands as they would be if they had been there all winter; and when it becomes warm enough for them to fly they begin to fly just as they would in the spring if they had been out there in the winter, and we have no difficulty with their “drifting,” as it is called, or swarming out, or anything of that kind.

Mr. Thompson—I would like to ask, in the case of drifting in the spring, is there danger of carrying foul brood at that time if there is any foul brood in the yard?

Mr. Taylor—I don’t know, but I should think very likely there would be.

Mr. Kimmey—Two years ago I took my bees from the cellar, carried them out and put them on the stands on a bright, warm, sunshiny day. Immediately upon my moving them out, I narrowed the hive-entrances so I thought I would prevent any robbing, and they flew out and went back of their own accord, seemingly every bee in its proper hive. Last spring I took them out on a cool day and they staid out 2 days. I took them out Friday, and on Sunday morning the air was full of bees, and they “drifted” right into that corner of the yard, and this corner had scarcely any. That is an actual experience.

Mr. Taylor—Locations must differ.

Mr. Wilcox—I will say, in answer to that question, I agree with Mr. Taylor emphatically. I put my bees into the cellar without bottom-boards, and consequently they stand level. If the bottom-boards were on I would prefer they should be slanting, so that the bees in a warm spell might clean out the dead ones more easily. But in carrying them out in the spring I find it more convenient to move them while the temperature is going down. For that reason I carry them out between 4 o’clock and bedtime, and if they fly a little before dark all the better, but if they do not, they take their chances in the morning. It may be a foggy, wet day, in which case it would be bad for them, but otherwise it is all right.

Miss Wilson—We commence carrying out ours in the morning and carry them out as fast as we can. When we close the entrance down to a small en-

trance we have had no trouble with their mixing.

Mr. Kimmey—Perhaps I would better say I did not close the entrances, and perhaps that is the secret. The year before I was careful to close them, but having carried them out and leaving them from Friday to Sunday, left them open. I have the bottom-boards off all winter.

Mr. Taylor—In regard to closing the entrance, I think it is of prime importance that the entrance be closed up to say an inch just as soon as they are set out. As surely as you leave the entrances wide open, when a warm day

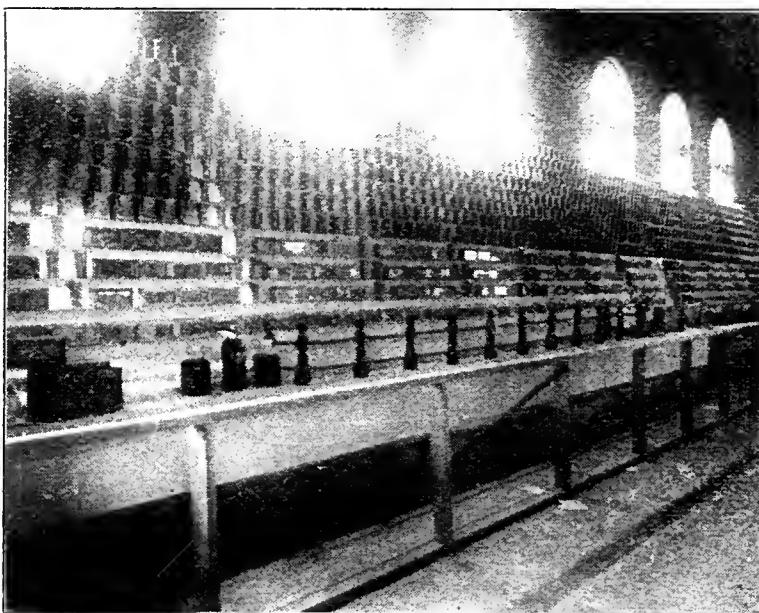
hive, has a subway, and I do not have to close it in the spring or any time in the winter. It stands out all winter and I do not have any trouble with their drifting or going to other hives when they come out in the spring, because they come out always when it is warm enough during the winter any time.

THE BEST SUPER.

"What is the best super for comb honey?"

Dr. Miller—T-super.

Mr. Taylor—I would not have one on my place.



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comes robbing will be begun; but if you close them up to about an inch, you will never hear anything about robbing.

Mr. Pease—On that same theory, setting bees out in the spring and closing the entrances to prevent their robbing or drifting, as I understand the question, if bees are wintered outdoors, with what we call a small opening, in the spring when our bees come out, does the same theory apply to close the entrance to prevent bees from drifting or mixing when they take their flight in the spring?

Mr. Taylor—They are not apt to drift if they are out all winter.

Mr. Whitney—With me, I never close the entrance, but mine is a double-wall

Pres. York—What does Mr. Taylor prefer them, a section-holder super?

Mr. Taylor—No, not exactly; I want a wide-frame, single tier.

Mr. Wilcox—That is mine exactly, for my locality. I think if I lived where Dr. Miller does I would not care so much for it. The reason I prefer the wide frame is because the top of the section is covered, and the bees can not fill it with propolis. They surely would in my country and they surely would not do it with white clover.

Pres. York—How many prefer the T-super? 4. How many prefer the ordinary section-holder super without a top-bar, like the wide frame, the ordinary section-holder super? 4. How many

prefer the wide-frame super that Mr. Taylor speaks of? 5. Any other kind of a comb honey super?

Mr. Abbott—What does Mr. Taylor mean by wide frame—with slats in the bottom or what?

Pres. York—As I understand, it is enclosed all around, single-tier instead of double-tier.

Mr. Taylor—Top and bottom reversing, enclose the thing. If made right they are the best thing you can get, not excepting the T-super.

Mr. Abbott—I wouldn't have them.

Mr. Arnd—How do you get the sections out of such a frame as that?

Mr. Taylor—The great thing is to get them in. There is no trouble getting them out. I can show you. What do you mean, get the frames out of the hive?

Pres. York—How do you get the sections out of a wide frame?

Mr. Taylor—Supposing this is a wide frame (indicating). Of course the wide frame is made to clasp the section so that the bees can not get much propolis in between the top-bar and the section. Ordinarily, unless it is cold weather, they will come right out, unless there is considerable propolis there. In that case the top-bar may stick to the sections a little. In that case you want to just run a knife a little between the top-bar and the sections, then take your thumb-nail and press on the section at this end and just start it a little, and take that end the same, and they drop right out.

Mr. Abbott—You will wear your thumb-nails off.

Mr. Taylor—It won't wear mine off. Everybody that works with bees ought to have thumb-nails and finger-nails. It is just as necessary as to be ingenious. You can't get supers made right in the shop. I will tell you why. The manufacturers are careful to save every sliver of their lumber, and they cut the bottom and top-bar straight across. You want to cut them the right length and then let the saw run over the bar so it is not straight. It is a little bending. Then in nailing them together you put those bends in so they will hold on to the section, and they keep the propolis out.

Mr. Wilcox—I think there is a better way to get them out than that. I would not use the wide frames if there was not. I would adopt the T-super. I have used for many years a "back," or

you might call it a "push-board." I wish I could illustrate it and possibly I can.

Mr. Taylor—To get them out of the wide frames?

Mr. Wilcox—Yes, sir.

Mr. Taylor—Where is your separator?

Mr. Wilcox—My separator is nailed right on to the side of the wide frames. It is a $4\frac{1}{4}$ section and a 3-inch separator, and there is a little space both above and below the separator. It doesn't extend clear to the top nor clear to the bottom. There is space enough so that a thin board, it may be wood or metal, is fastened on to the edge and sticking up an inch on each side, and then you take the wide frame with the tin separator side down, and lay it on that block so that the edge of the sections both top and bottom comes right along the edge of this strip nailed on to a little block here, or, if it is metal, screwed on. Then you push a little down on it and all your sections are pushed right up and out as far as you wish them.

"Is the T-super suitable for a beginner?"

Mr. Taylor—No.

Pres. York—It is all right for a man who has had bees for 40 years, and has written a book on them, I suppose!

Dr. Miller—I would advise a beginner, if he wants to begin with the best, to begin with a T-super.

"If the T-super is the great comb-honey super, how is it that it is not listed by manufacturers?"

Mr. Taylor—They know better.

Dr. Miller—Another question might come up on that: How is it that manufacturers list T-tins and do not list T-supers?

Pres. York—Because they want to sell them, I suppose. What do you know about that, Mr. Abbott?

Mr. Abbott—I know we have some we would like to get rid of. If the Doctor wants to make any T-supers we can furnish the tins. We have had them a long time.

Dr. Miller—I have some wide-frames I might trade for them. [Laughter.]

ADVERTISING HONEY.

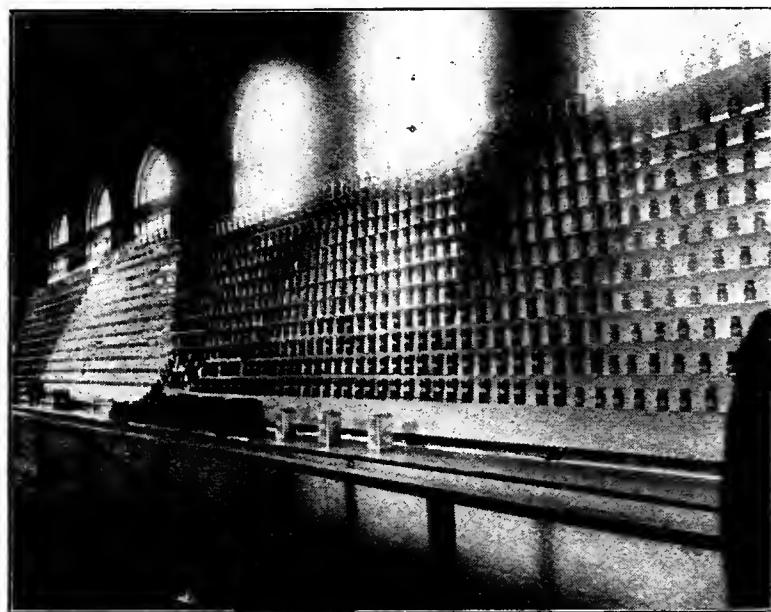
"What can bee-keepers do to advertise honey?"

Pres. York—Mr. Burdette is here, who has had considerable experience in helping other organizations advertise.

Mr. Burdette—I was in charge of a

press bureau that has been tried by the National Council of Horticulture, which is an organization to which applications have been sent by all of the trade associations of the seedsmen, florists and nursery men. The President of it is Mr. J. C. Vaughan. Horticulture has been taking quite a spurt in public interest in the last 2 or 3 years, and Mr. Vaughan conceived the idea of trying to give it a little impetus by teaching the public the value of shrubs and flowers, and the National Council of Horticulture has undertaken to supply the news-

eat honey, and if you put the advantages of honey before them in the newspapers, I should think it would help broaden the market. I have outlined in a letter to Mr. York a plan based on the experimental service that we conducted for the National Council of Horticulture, to send out to the newspapers about 4 articles every 2 weeks for a period of 20 weeks. That would be practically the same amount that we distributed along horticultural lines, except that it would extend over a longer period, not to give them so much matter at a time,



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papers throughout the country with articles on horticulture—articles that would deal with the subject in a purely elementary way, and intended for amateurs. They are trying to get people to grow flowers and to plant shrubs in their yards. We conducted an experimental service a year ago for 10 weeks, sent articles to 2500 newspapers all over the country, and in most of those papers the articles were printed. Mr. York thought it would be possible to apply the same system to arousing public interest in honey. I do not see why it would not be possible. Horticulture, of course, appeals to more people perhaps than honey would, as horticulture appeals to more people than bee-keeping, but still everybody can be induced to

and by keeping a check on that, a check of results, it would be very easy to determine what its value would be to the bee-keeper. We can find out just how many newspapers use that matter, and then the bee-keepers themselves could tell what effect it had upon the public, and it would be a very simple matter to determine just how far that method of publicity could be used to benefit the bee-keepers. Mr. York asked me to come here and explain this to you; it is pretty hard to explain in detail, and I am sorry I did not bring some of the clippings. We had great success with the horticultural matter. The Chicago Tribune published all we sent. The Daily News did also, and practically all the large newspapers all over the country we sent

it to were glad to get it, and it seems to me similar matter might be gotten up about honey which could be used with equal success.

Mr. Taylor—I would like to ask a question. You say you are highly successful in this advertising. In what did your success consist?

Mr. Burdette—We succeeded in getting the matter in the newspapers all over the country. The seedsmen seem to be of the opinion that it helped them decidedly.

Mr. Taylor—In what way did it help them?

Mr. Burdette—It helped them by increasing the public demand for seeds and shrubs.

Mr. Taylor—Was it advertising seeds or novelties?

Mr. Burdette—Practically old stocks.

Mr. Taylor—Weren't people pretty well advised as to old stocks?

Mr. Burnette—They certainly were not. The newspapers seem to believe what the people want is elementary instruction in horticulture. The fact is, most people don't know much about it.

Mr. Taylor—Did the instruction consist in directing as to gardening, as to plants?

Mr. Burdette—Simply general instructions.

Mr. Taylor—Not particularly as to purchase of seeds, simply how to take care of the plants?

Mr. Burdette—What plants are suitable for certain places. One article might be how to make a backyard garden, what kind of shrubs or perennials to plant, and how to take care of them. So about the color of the blossom, the kind of soil, whether to plant in a shady or sunny place.

Mr. Taylor—And what parallel is there between advertising in that way in regard to horticulture and in regard to honey?

Mr. Burdette—Of course, we would have to advertise in a different way in regard to honey. The only parallel is generally that all advertising, if good for one thing, is good for another.

Mr. Taylor—What instruction could you give in an advertisement in regard to honey that would be of benefit?

Mr. Burdette—Of course, it is not an advertisement. It is simply a little article.

Mr. Taylor—The effect is the same. That is, you look for an effect from the

advertising, though you manage to get your advertising done without paying. Still, that is all the good effect you get, because your things are advertised.

Mr. Burdette—I should say that you could publish interesting facts about honey. Tell the people some things about honey, and they would begin to think about honey. If you told them the value of honey from the food standpoint, perhaps they would buy some.

Mr. Todd—There are two kinds of advertising. There is the plain, straightforward kind of advertising and the insidious. Mr. Burdette has been directing the insidious campaign in favor of the seed-business.

Mr. Burdette—It is more in the nature of general publicity than advertising.

Dr. Miller—if Mr. Burdette knows how to put the things before the public that we would like to get before them, we can get them to want honey a little more than they do now. Do you believe you could do anything of that kind?

Mr. Burdette—Well, I do believe that I could get interesting facts about honey published in the newspapers. I suppose unquestionably that would increase the sale of honey. I do not see why it should do otherwise.

Dr. Miller—Then I would say if you could increase the demand in that way we could sell it for a higher price. Do you believe, sir, that you can get the papers to put in some suggestion that honey is a good thing, that it is more wholesome to have honey than candy for children, and that they would live longer if they had honey?

Mr. Burdette—Of course not in those words.

Dr. Miller—I am not asking that.

Mr. Burdette—Of course, I have never tried to get anything about honey in the newspapers, but we have got stuff in about flowers and plants.

Mr. Todd—Entirely different; very different.

Dr. Miller—I don't know, sir, that it is entirely different. I think he could do it.

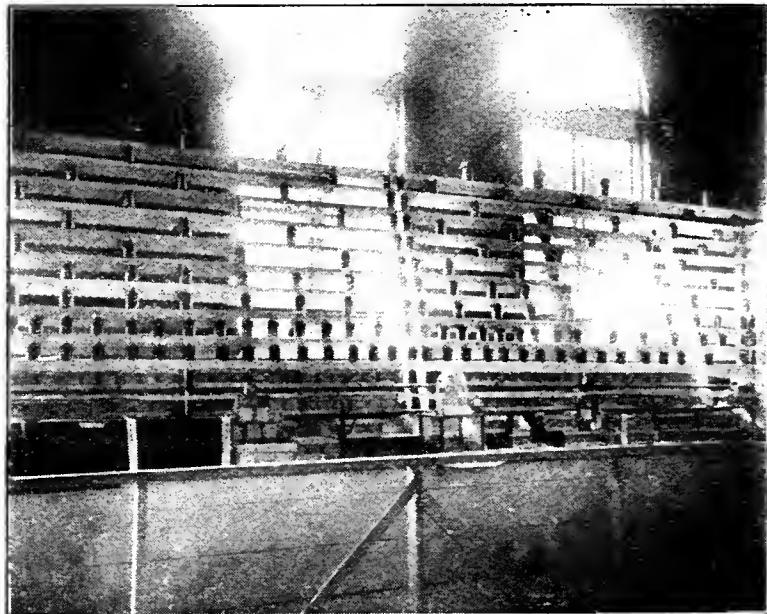
Mr. Burdette—My personal opinion would be that I can.

Mr. Chapman—I would like to state that Mr. Hutchinson had an article in the *Cosmopolitan* a few years ago that was interesting enough for the magazine to publish it, and was widely read over

the United States. I had friends tell me that the best they ever read about bee-keeping was that article, and such articles could be put in the daily newspapers, not as extensive as his, and they would awaken an interest in honey.

Mr. Thompson—When it comes to newspapers printing anything that is given to them on the subject of bees, I think they will print anything—some newspapers will. Perhaps there are some here that will remember two or

country that you have read and did not know it. There is a woman who writes from some place in Kentucky, that signs her name "Kentuckian" mostly. She is employd by the Sapolio people, and the Pearline people, and the borax people, and several other people, and she writes home articles for papers. Her articles appear all over the United States in agricultural papers in the home department, and the only thing that is in them—for instance, she will tell how to clean



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three months ago the Chicago Record-Herald had an article stating that a bee-keeper in Iowa who had kept bees for a number of years died, and his bees commenced to sulk, they would work no longer, and they had trouble keeping them away from his remains—they followed him to the grave, they had such an attachment for him. So if a newspaper will print anything like that, you can get them to print anything, can't you?

Mr. Abbott—It seems to me very clear that here is a plan of advertising that is almost unlimited. I have had a good deal of experience. I am a newspaper man myself, and I haven't an ax to grind and I am not scared at advertising. But let me tell you about a class of advertising that is done all over this

carpets, and the only thing that smacks of an advertisement is that she gets in the name Sapolio once in a while. The borax trust have women employed in the same way. One writes from Emporia, Kans., to the home department of agricultural papers. She recommends borax for sore eyes, and baracic acid for all sorts of things. They try hard to "work" us. They "worked" my wife for a little while. She is better natured than I am. I eliminated the borax. I said, "some good disinfectant." I eliminated Pearline and said, "some good washing powder," and of course the articles stopped when I edited them, which was a good thing. It could just as well be honey as borax, and if General Manager France would arrange with a half dozen men like Dr. Miller and Mr.

York and others that I can mention, to write the articles, they can be put into 99 out of 100 of the newspapers of the United States tomorrow, without any trouble at all. That will boost honey just as high as you want it before the public, and it will double the demand for honey all over this country in a little while. I wish the National Association would just take up that kind of thing and spend two or three thousand dollars lying in the treasury doing nothing in advertising honey all over the United States.

Dr. Miller—I want to endorse what Mr. Abbott has said, and then add this: The material that we would want to go before the public, there would be in it no trick. This is no "Sapolio" business. It is all square, honest work. Here is information that the public needs, it is for their benefit. We can get it in. I believe, further, that instead of having me do a part of it and Mr. France, and so on in that way, if this work has been done for the horticulturists, the experience that has been gained in doing that work will be of immense advantage in our work. But, as I said before, I have not examined carefully the material of which this man is made. If he is put together so that he can get things into papers, I would rather a good deal get some man who is expert at it to do it than to have us bunglers go at it. It would be worth a great deal more. I don't know him at all, and I don't know what commission he may get on what he can do, but if he or his concern to which he is attached can do the work, I believe it would do us a lot of good to pay something for it.

Pres. York—I know Mr. Burdette a little bit, and anything he would prepare would be submitted to Mr. France or a committee designated to revise anything he might write. But I am satisfied that he can get things into papers that we could not at all, because he has been doing it.

Mr. Kimmey—I was surprised when Mr. Burdette came in today. I have known Mr. Burdette for a long time, but I did not know he had been engaged in the horticultural business. I did not know he knew Mr. York, nor that he was coming here. I also know something about the seed trade. Mr. York has told you that I am Secretary of the National Poultry Association, whose

business it is to give a poultry show in Chicago. For every meeting I have been in the habit of employing some press agent. Last year I employed Mr. Burdette, and he is head and shoulders above any other men and women I have employed. I have a new contract, signed a few days ago, agreeing to pay him two or three hundred dollars for three weeks' work. You have all got articles in your papers. We worked it up. We have them in nearly all the papers. It is an educational business. You don't need to hide a single thing when we talk about honey. We don't have to misrepresent a single thing. Without knowing that Mr. Burdette was at all to blame for it, or had anything to do with it, I know that the demand for seeds, bulbs and such as he mentioned last season was phenomenally large in Chicago. Every seed-house was burdened with work, and they did not have to burn a single pound of their seed nor to throw away a single one of their shrubs. It is a matter of notoriety, known throughout Chicago. I am glad it happened so that I could give this testimony in favor of Mr. York's project, and of Mr. Burdette's idea. As to just what persons shall do this work, I have no doubt—pardon me for saying it—that I could write an article just as well as Mr. Burdette can, but I have other things to attend to. I think Dr. Miller could write better about honey than Mr. Burdette. But I think to entrust the matter to a man like Mr. Burdette, who will bore Dr. Miller for facts, and go to Mr. Hutchinson and Mr. York, and then sit down and trim it all over, will do more effectual work than you can if you scatter your energies.

Mr. Whitney—I feel great interest in this matter of the education of the public with regard to the value of honey, and it is my opinion that there is nothing that we can say in a public way as to the use of honey that will not do the bee-keeper good. I have had a little experience up at our place. Our local editor there wanted to know if I would not write something for the local paper, and I wrote a few articles, and they appeared every week for 5 or 6 weeks, and people became very much interested in bees and honey, and since then I have not asked a single person to buy any honey; I could sell more of it than I can possibly produce or get. I know

that publicity is a good thing for honey, if you talk right, and tell the truth.

Mr. Burdette—Some misapprehension seems to exist as to the nature of the articles that we sent out. It was not our purpose in doing this horticultural work to trick anybody. We simply filled a legitimate demand for horticultural information.

Mr. Todd—How to do.

Mr. Burdette—Yes, exactly. For one thing, we had the experience of Mr. Keeley, Managing Editor of the Chicago Tribune, who once conducted a department of gardening on that paper, and he told us it was astonishing the number of people who were absolutely ignorant of the first principles of gardening—people who would buy bulbs and plant them upside down; didn't know how to plant seed or anything of that sort. The papers all seemed to know that there is a great deal of interest in that sort of thing, and were glad to get the information that we furnished, and they understood thoroughly that we furnished it, and why we furnished it. We had a large number of scientists on the National Council—Professor Tracy, of the Department in Washington; Professor Taft, of the Michigan Agricultural Experiment Station, and Professor Irish, of Shaw's Gardens, in St. Louis. I believe there is also a great deal of interest in bees all over the country, and in honey, and that the papers would be willing to print whatever we might send out about bees and honey, provided it was written in the right way. Of course we could not send out what was purely advertising, saying people ought to buy honey. Papers could not print that unless we paid them for it; but I have gone on the assumption that there is a great deal of information about the use of honey, and facts about bees, that the public would be glad to know, and the papers would be glad to print, and the effect of those articles would be to interest the public in bees and in honey, and the indirect effect would be to increase the sale of honey. Of course, the only thing projected here is an experimental series to see just exactly what kind of articles can be prepared along that line, and what effect those articles will have. I think it is worth trying. Don't you think that there is material for articles on the use of honey and facts about bees?

Mr. Todd—Most people use honey

simply raw. You might have one article acceptable about honey, but you would not have a series which would give it the force of cumulative advertising.

Dr. Bohrer—what was Mr. Burdett's question?

Mr. Burdette—I was asking if there was not material for articles of that sort. I am not very well acquainted with bee-keeping or with honey. I don't know what material there may be.

Mr. Todd—How many different ways could honey be served up?

Mr. Abbott—I want to say, without any egotism, that I can sit down here in an hour's time and write an article on honey that will go into any paper in the United States. There isn't a paper in the United States that would not publish it.

Mr. Todd—And a second one?

Mr. Abbott—Yes, sir, and a third one, and I can write a fourth one that any paper in the United States will print, and pay me money for doing it, and I can write a fifth one that the papers will take and pay me for it, and there won't be any nonsense in it. There won't be any bees following their master to the grave or anything of that kind. But you need not talk about anybody that does not know the honey-business from A to Z and has not been in it 25 years, as I have, because they can't do it. You don't have to tell people to buy honey. You have to tell people to eat honey, and then if they haven't got the honey they will come to you and buy it.

Dr. Bohrer—Isn't it also important, and of greater importance at this time than anything else, to satisfy the people that what they are getting is absolutely pure?

Mr. Abbott—Yes, sir. I could write on the purity and the probability of being adulterated. There is no doubt about the facts. The papers will publish that.

Pres. York—I do not think I could write many articles on photography, as Mr. Todd could do, but I think I could write a few articles on honey.

Mr. Clarke—Probably I might give an illustration in a small way of what people want to know about honey. I have conducted a bee-department in an agricultural paper for 7 years in Iowa. I have undertaken to answer any question anybody asks me pertaining to bees or honey, and I do not know exactly

the number of inquiries that I have had in 7 years, but I think it is over 7000 in regard to bees and honey.

Mr. France—I would like to get the expression of the honey-producers on this subject. They are interested in the disposition of their product. Various ways have been suggested, and this means of advertising is a good one. There was a fund transferred over to the National Association, and it has been waiting for effective work until we could get a system and something that would give satisfaction. To get a committee that would be satisfactory to the producers and to those who had transferred this fund to the National has been a difficult matter. That, I think, is about through with, and the next question came up wherein or how we shall begin the use of that fund to advertise and create a demand for more honey. This proposition that has just now been discussed will be one of the first that that committee will consider. Two at least of the three I know are favorable to starting such a move in the near future. Other ways have been suggested, and the more that you can suggest to this committee the better, and save your time for the convention. I believe one of the things we have got to employ, as has been done in other lines, is telling the usefulness of honey to the public. When they realize the value of it as a food, then enlighten, in some way, the public, that when they are buying honey they are getting Nature's purest wholesome sweet for their stomachs, and you have established a demand for honey.

Dr. Bohrer—And that what they will buy will be honey.

Mr. France—Yes, sir.

Mr. Burdette—I want to say I do not know anything about honey. I would not attempt to write these articles myself. The horticultural articles were all of them prepared under the direction of experts. Most of them were prepared by Professor Irish, who is in charge of Shaw's Gardens at St. Louis, one of the largest botanical gardens in the country, and they were sent to me. I simply took them—most of them were too long—I made it a rule not to send out any article of over 300 words—divided them into appropriate lengths, and re-wrote them so as to get the "feature," as we call it in the newspaper business, at the top; simply put them in

to shape so that the newspaper editors would not have to revise them; and that is all I did, simply to distribute these things to the newspapers in the proper form. As has been stated here, they should be written first by men who know honey; that is, the material should be supplied by those men, and all I could attempt to do would be to put that material into the form for the newspapers. There are a good many things to consider when you do that. I am a newspaper man. I think I know the way to do that, although I don't know anything about honey. That is all that I would do, and the estimate I made for this experimental work was simply putting it into shape and sending to the newspapers. For preparing material it would be different.

Mr. Hutchinson—Speaking of writing some articles to do some good to sell honey, I have some honey of my own this year and I wrote an advertisement advertising that honey. I tried to write it in such a way that a man reading that advertisement would want some of that honey. A man wrote me, "I have been tasting that honey ever since I read that advertisement." That is the kind of an article we want to write for the papers; when a man reads the article he wants to go right out and get some honey and try it.

Mr. Taylor—There is a distinction I think we ought to make in this matter of advertising. That is, the difference between advertising a person and advertising a product. Now Mr. Hutchinson sold his honey because he advertised himself; he advertised the fact that he had honey to sell. It was not because he gave any new information about honey that enabled him to sell. It was because he advertised himself.

Pres. York—Mr. Hutchinson said the man was tasting the honey all the time, and not tasting Mr. Hutchinson!

Mr. Taylor—Because he had a good deal of faith in Mr. Hutchinson, and knew any honey he extracted of course would be extra-good.

Mr. Chapman—I would like to call attention to a fact that is really before the meeting here. I see by the newspapers that one of the women's clubs here is discussing the reading of Dickens' works because he always refers to eating and drinking, claiming that the references to eating and drinking cause

a great many people to go out and over-eat and drink. It is along this line that our friends refer to—discussing honey, referring to the fact that it is one of the oldest foods known in the world, that it has come down through the ages to be a blessing to the people, that people with delicate stomachs who can not eat sugar or syrup can still eat honey; such statements will set a person thinking that he hasn't had any honey for a god while, that he would like some now, and he goes out and buys it.

Mr. Arnd—I was a contributor originally to the fund for advertising. I move that the Chicago Northwestern Bee-Keepers' Association recommend to the National that they use the fund mentioned by Mr. France, in just such advertising as we have spoken of today.

The motion was seconded.

Pres. York—I ought to say, perhaps, before we take a vote on this, that the experiment will not cost over about \$300 to make the first engagement. It is moved and seconded that we recommend to the National, or to the Directors, that the money in their hands from the Honey-Producers' League be used in such work as has been outlined here. Of course there may be other methods, used also.

The motion was put and carried.

FOUL-BROODY COLONY DEFENDING ITSELF.

"Is it a fact that a foul-broody colony defends itself against robbers with less vigor than a healthy one of corresponding strength?"

Mr. Taylor—Yes, I think so. It makes them have less heart, don't care whether school keeps or not; and, more than that, there is a scent about the hive that I think attracts robber-bees. Don't you think so, Mr. France?

Mr. France—Yes, sir.

Mr. Taylor—if there is a colony that has any foul brood about it, you will notice the robber-bees are prowling around there. I don't know whether it is the scent, or whether they appreciate that the defenders are not very anxious to defend their hives. Any way, you have got to look out if you have a colony of foul brood.

Mr. France—I think Mr. Taylor has pretty nearly covered the ground. The bees seem to lack the defensive, and the odor also seems to have a tendency to

warn the outside bees that there is something wrong.

BROOD-CHAMBER IN WINTER.

"For wintering on the summer stands in 10-frame Langstroth hives, is it advisable to contract the brood-chamber with tight-fitting division-boards?"

Members—No.

Mr. France—That depends upon your location. The farther north you are the more you need to contract them. You do not need any of that if you are down in Missouri; and if you go into the extreme northern part of Wisconsin where the thermometer goes to 40 below, you have other conditions. There are other conditions for an outdoor winter. I want a good, vigorous queen in the fall, and more than honey enough.

Mr. Wilcox—I would say from what experience I have had in outdoor wintering that I would contract a little, but more especially put on another story, use the second story for outdoor wintering, always with 4 or 5 combs in, and of course a division-board at each side and packing behind. I think the second story is the most important part of outdoor wintering.

Mr. Jones—I would say it depends not alone upon the locality but upon the strength of the colony. With a really good young colony with plenty of bees in there, there would perhaps be no necessity of it, and perhaps no advantage; but a small colony, I say by all means to contract. I have wintered bees in Wisconsin outdoors. Up there I do not think there would be any show of their wintering if they had not been contracted.

Mr. Chapman—I believe 2-frame division-boards, in our locality of Chicago, are of great benefit to the bees. Mr. Wright, at one time attending our convention, said if you would take a super of dry extracting combs and place it underneath the hive-body where you wished to winter them, it would be far better for the bees. I have practiced that now for 6 years; placed it underneath, put a supper the section-size on top of either excelsior or ground cork, and I have never lost a colony of bees. I did not lose them 3 years ago when so many were lost here, and I have my bees right on the roof of the house, where they are exposed to all the winds and weather that can be, and I think I have struck an excellent plan.

POINTS IN JUDGING BEES.

"In judging Italian bees at fairs, what points should be taken into consideration?"

Mr. Wilcox—I did not ask that question, but that is just the information I want. I may say what I have done, but I don't know what I ought to do. I have considered as of first importance uniformity of markings. This, of course, speaks of Italian bees. Uniformity of markings of the worker-bees is my standard for purity. If all the bees are alike—size, color and shape—I consider it proof positive that they are pure-bred. It is the only standard I have, absolutely, in judging bees. If I had them in my apiary where I could observe their actions, then I would have additional standards, but we can not have that at the shows, consequently we must judge from the looks only. Size and uniformity of markings are the principal things. Size, however, is an uncertain standard, because the more agitation, excitement and jarring you give them the larger they will be. You go in the morning and look at the bees on exhibition and they are small, and in the afternoon they are much larger. The fact is, they have gorged themselves with honey.? So you can not depend very much upon the size, but you can upon the markings.

Mr. Jones—Wouldn't it be a little advantage for a person to get them in show condition, if he knew when the judge was coming around?

Mr. Wilcox—if size were important he could, but size is not a very important point.

Mr. Hutchinson—Uniformity is all you can go by. You can't tell by the size. If they are uniform in marking that is the best we can do.

FOUL BROOD LEGISLATION.

Dr. Bohrer—It may be a mere matter of criticism upon my part to call the attention of this Association to the matter of foul-brood legislation. I understand that here in Illinois you have a law for the use of the bee-keepers of the State, but that does not clothe a bee-inspector with authority to go upon the premises of a man who may have

foul brood, except at his will and pleasure. I don't know if you want to get the legislation to take cognizance of a matter of that kind. Find out and make a report of such persons as refuse flatly and absolutely to allow a bee-inspector to cure the disease or stamp it out, destroy his bees or make an effort to get them cured. If you can gather sufficient evidence, even perhaps one or two cases of that kind, where men have refused, then go to some influential member of the legislature, and some man who knows something about the business, if you can find one. We succeeded in our State in finding a man who knew something about bees and the wants of the bee-keepers. He laid it before the legislature. They were ready to hear it, when they found it was about to destroy an industry—an infant industry but growing rapidly—and we got a law. I believe if you can go before your legislatures with something of that kind and send men who understand what foul brood means, the destruction that it will bring to the industry in the State if not stamped out—and there is no question about that, it is unquestionably spreading, and where there is any carelessness tolerated it will continue to spread—if you will lay the matter before the legislature in that shape, get an influential member that will work, you may get a foul-brood law through that will clothe you with authority to stamp out the disease. I have been twice to our State legislature and have learned something about the way these things are managed, and it depends largely upon whose hands you get it into.

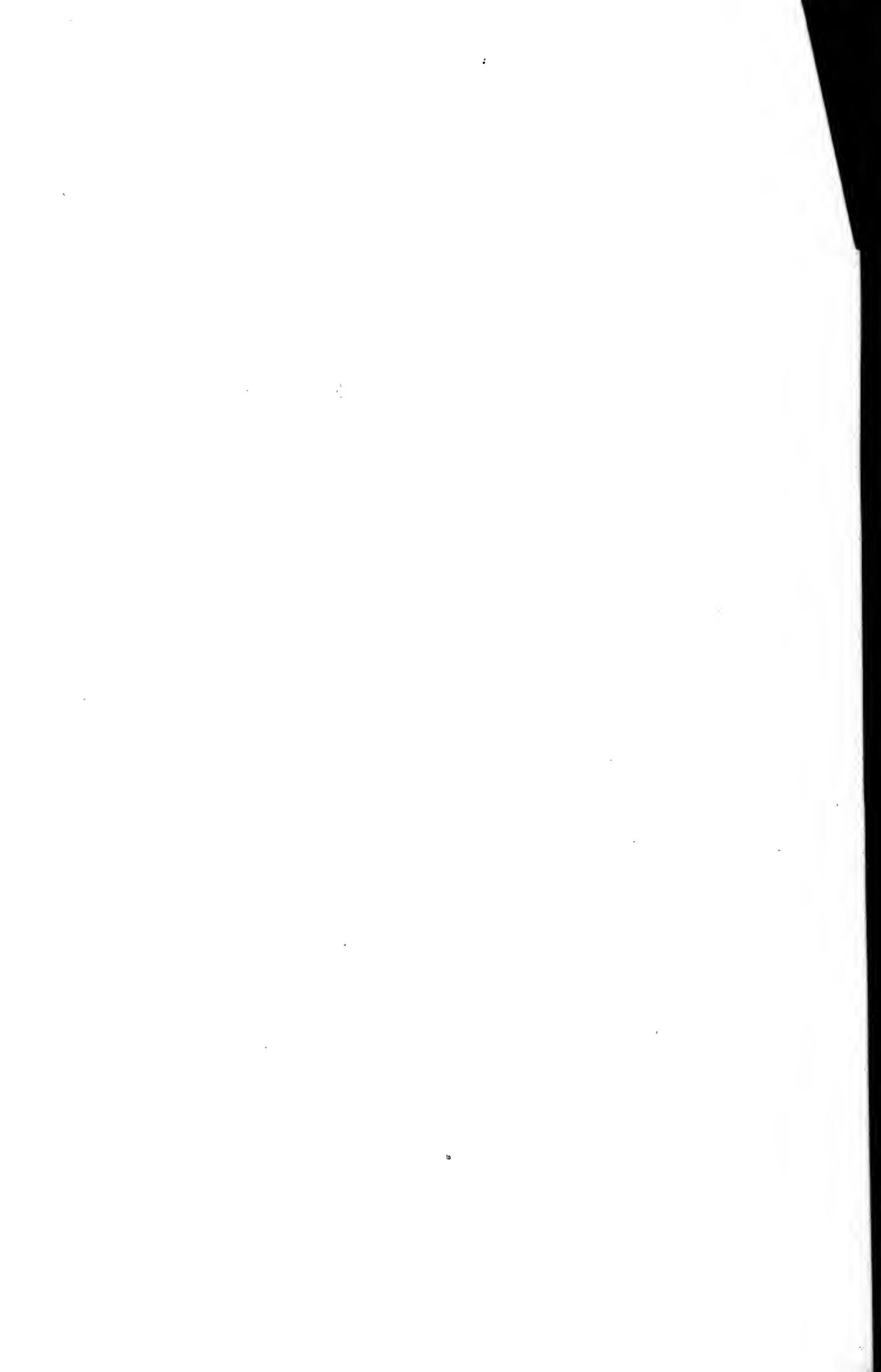
GETTING BETTER CONVENTIONS AND ATTENDANCE.

"How shall we have a big attendance and a good meeting next year?"

Mr. Taylor—Advertise.

Mr. Jones—Everybody come again and bring one with them.

Pres. York—I think that is a pretty good idea, and perhaps it could be pushed a little more in the various bee-papers. Is there anything further? If not, we will stand adjourned until the call of the Executive Committee next year.



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